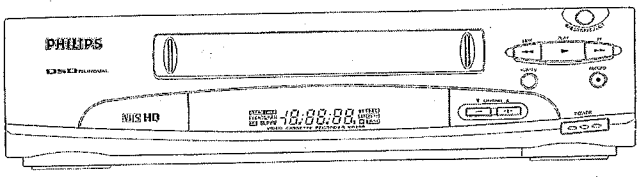
Video Cassette Recorder

VR255/55

Service
Service
Service

V20866



Service Manual

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2 Mechanism adjustments

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Specification:

Video recording system:	Rotary two head helical scan system
Antenna input Signal:	PAL B/G, D/K
Antenna:	VHF/UHF – 75Ω external antenna terminal
UHF Output Signal:	UHF channel 36 (adjustable 32-40) 75Ω unbalanced
Power requirement:	AC110V – 220V, ~ 50/60Hz
Power consumption:	18W
Operating temperature:	41°F (5°C) to 104°F (40°C)
Relative humidity:	10% to 80%
Weight:	3.8kg
Dimensions:	360 x 94 x 295mm

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

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PHILIPS

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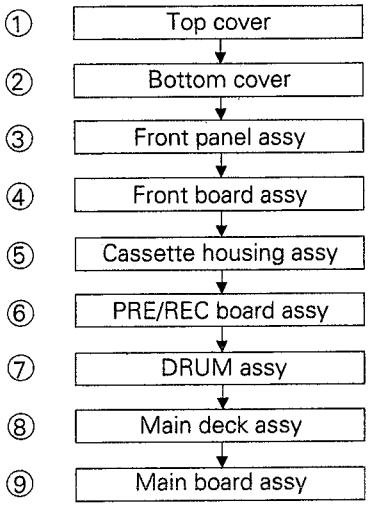
SECTION 1
DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART

This flowchart lists the disassembly steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	5(S1)	
②	BOTTOM COVER	D2	(S2),2(P1),9(L1)	
③	FRONT PANEL ASSY	D3	7(L2)	<NOTE 1>
④	FRONT BOARD ASSY	D4	9(L3),*CN1, *CN2	<NOTE 2>
⑤	CASSETTE HOUSING ASSY	D5	4(S3)	<NOTE 3>
⑥	PRE/REC BOARD ASSY	D6	2(S4),*CN1 *CN201,*CN202 SHIELD PLATE SHIELD CASE	

(1) (2) (3) (4) (5)

(1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) NO. of parts Figures.
(2) Part name to be removed or installed.
(3) Fig.No. showing procedure or part location
(4) Indentification of part to be removed,unhooked,unlocked, released,unpluged,unclamped or unsoldered. P = Spring, W = Washer, S = Screw, L = Locking tab, * = Unhook,unlock, release,unplug or unsolder.
(5) Adjustment information for installation

1.3 DISASSEMBLY/ASSEMBLY METHOD

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	5(S1)	
②	BOTTOM COVER	D2	(S2),(P1),9(L1)	
③	FRONT PANEL ASSY	D3	7(L2)	<NOTE1>
④	FRONT BOARD ASSY	D4	13(L3),*CN1	<NOTE2>
⑤	CASSETTE HOUSING ASSY	D5	2(S3), 2(S7)	<NOTE3>
⑥	PRE/REC BOARD ASSY	D6	2(S4),*CN1 *CN201,*CN202 SHIELD CASE	
⑦	DRUM ASSY	D7	3(S5),WR1,(L4), 4(L5) INERTIA PLATE HEAD CLEANER	<NOTE4>
⑧	MAIN DECK ASSY	D8	2(S6),WR2, *CN603 WR3,2(L6)	<NOTE5>
⑨	MAIN BOARD ASSY	D9	3(L7)	

<NOTE1>
When reattaching the front panel assy, make sure that the door opener of the cassette housing assy is lowered in position prior to the reinstallation.

<NOTE2>
When plugging the connector in, check that the flat wire is inserted properly and fully.

<NOTE3>
When reattaching the cassette housing assy, pay careful attention to the switch lever not to make it touch the REC switch knob of the MAIN board assy from the upside.
(If the REC switch knob of the MAIN board assy is damaged, cassette loading is impossible.)

<NOTE4>
When plugging the connector in, check that the flat wire is inserted properly and fully.

<NOTE5>
- When removing the Main deck assy only, unhook the two spacers connecting it with the Main board assy with pliers from the back side of the Main board assy first, and then remove the Main deck assy.
- When reattaching the Main deck assy to the Main board assy, make sure to set the spacers into the retaining slots respectively.

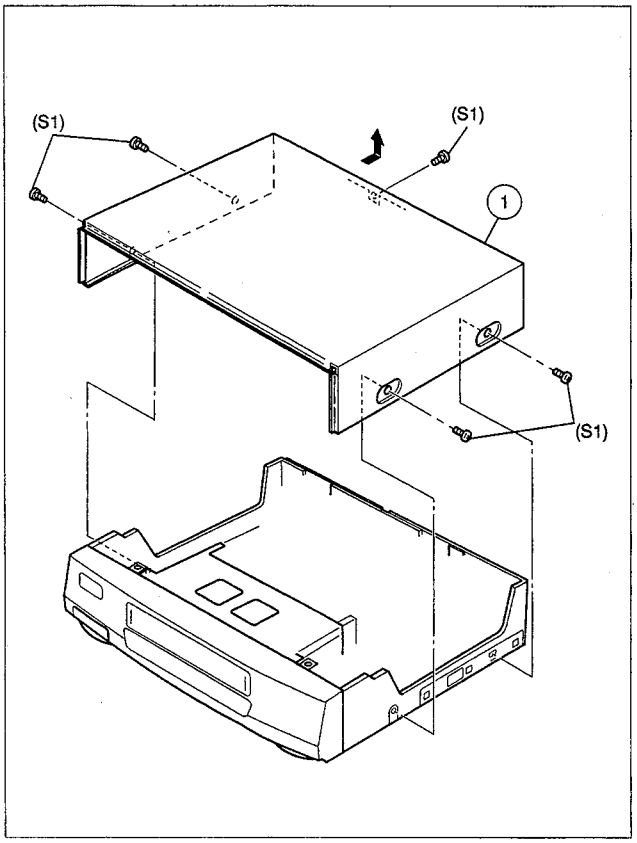


Fig. D1

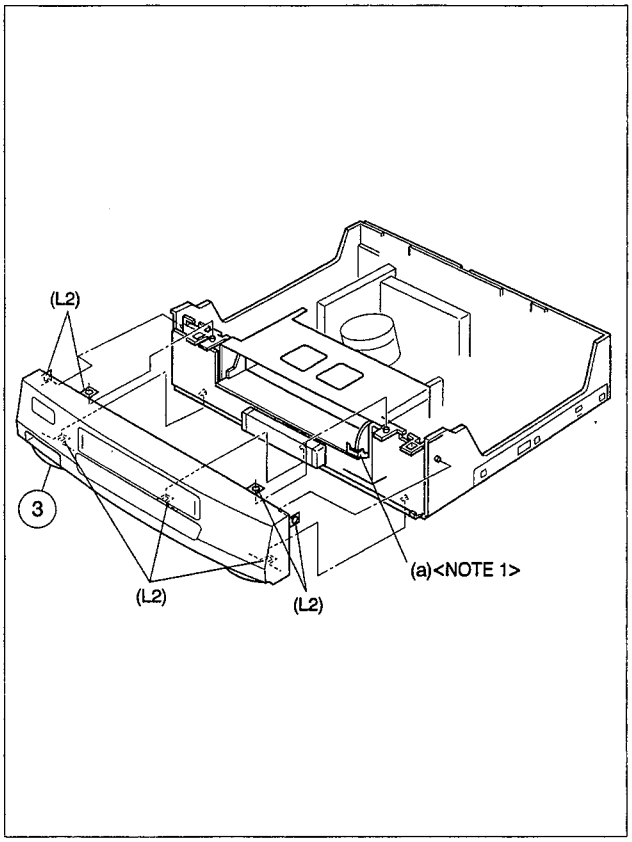


Fig. D3

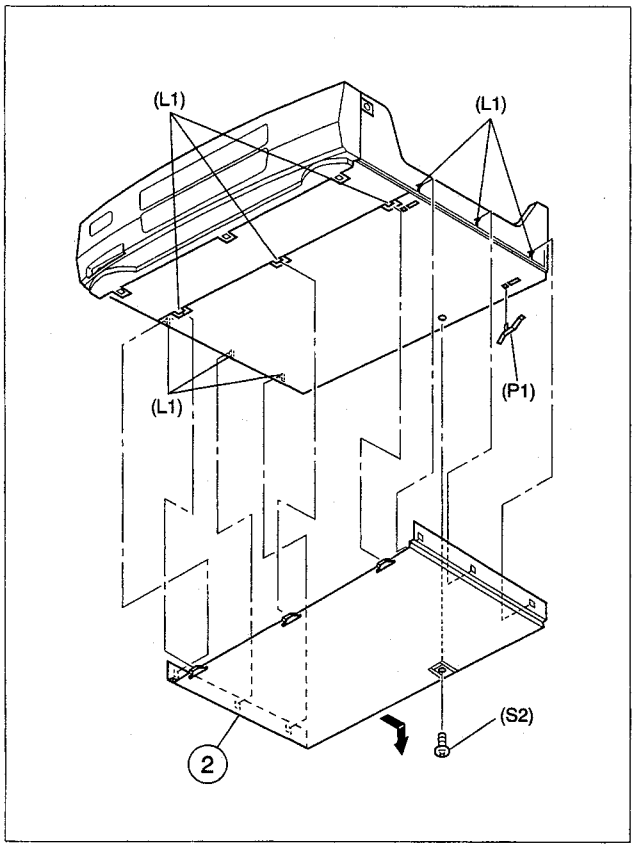


Fig. D2

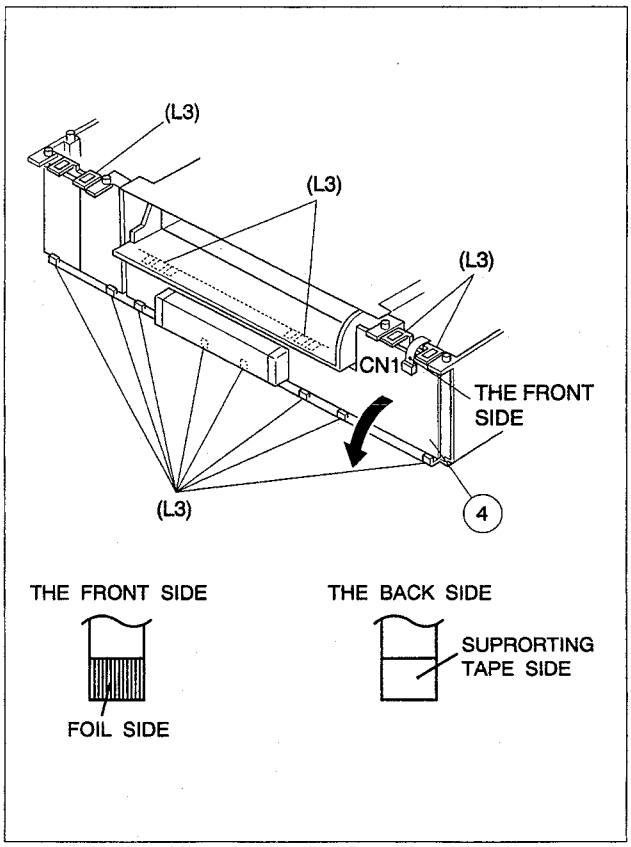


Fig. D4

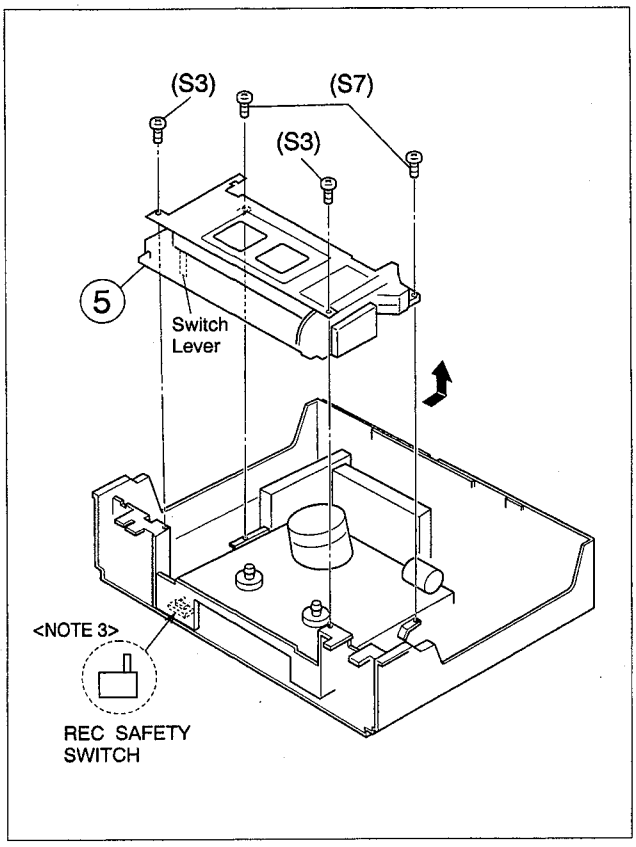


Fig. D5

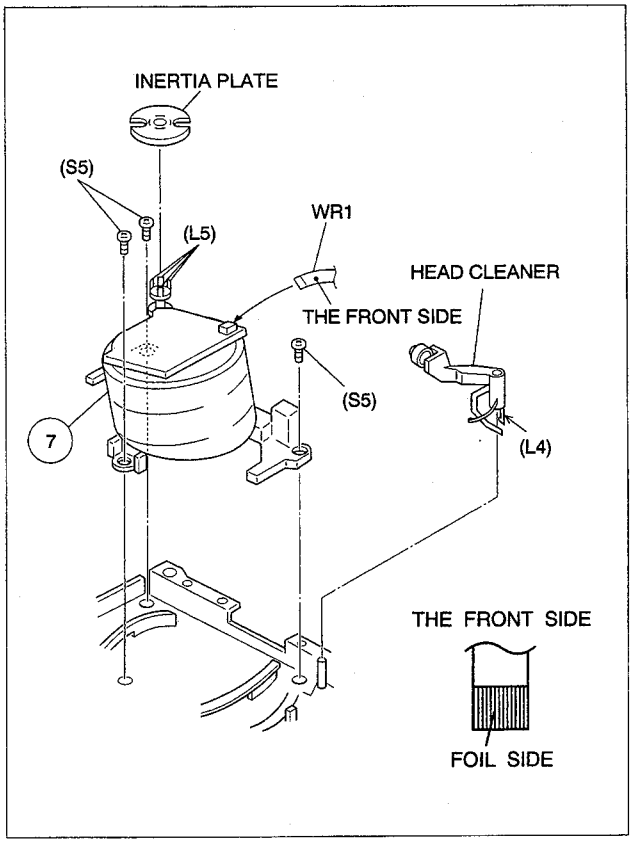


Fig. D7

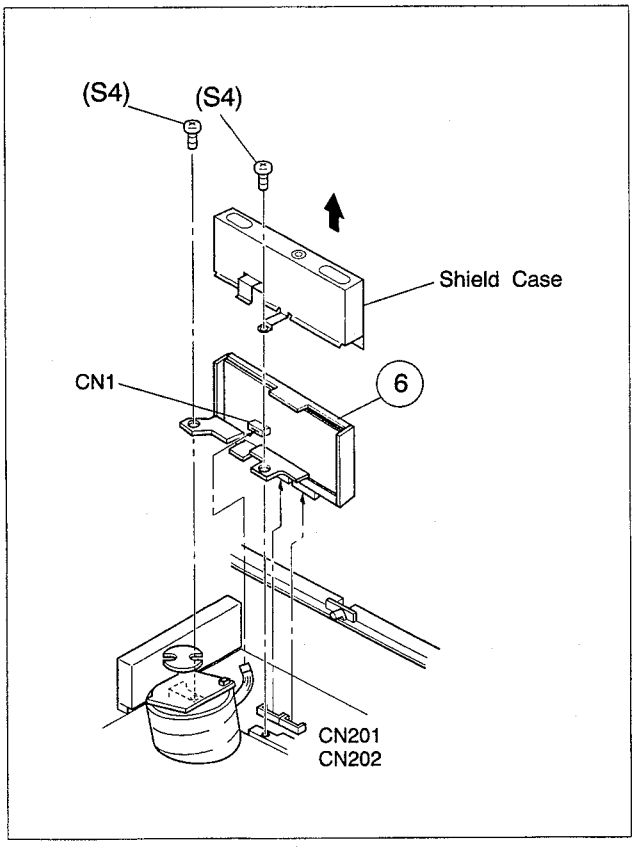


Fig. D6

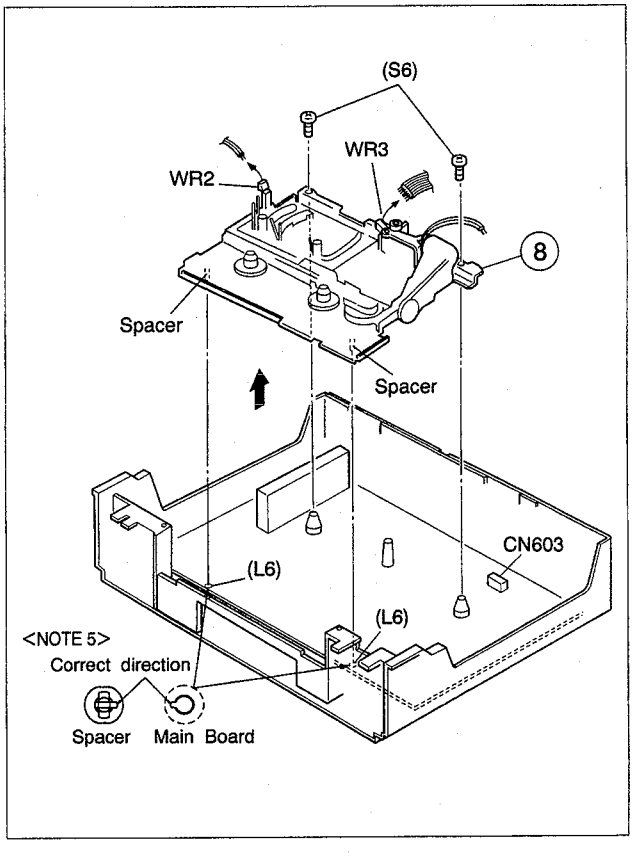


Fig. D8

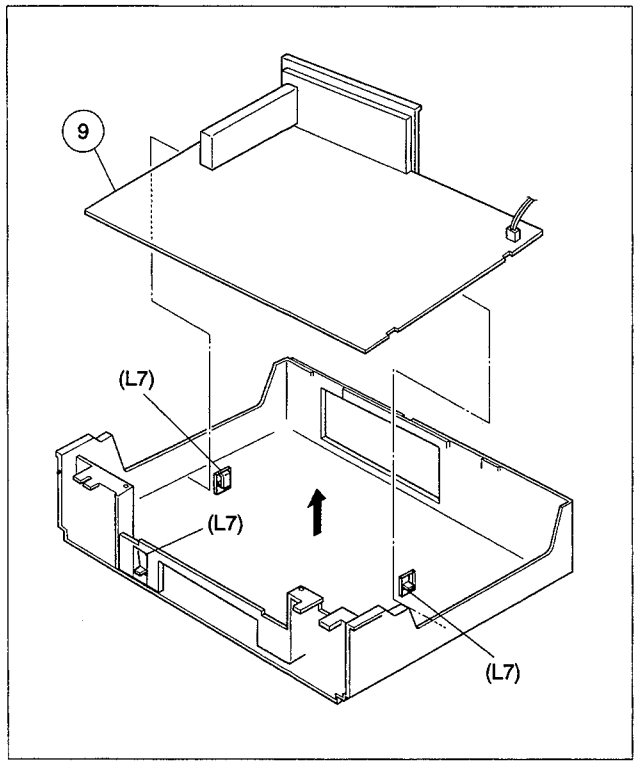


Fig. D9

1.4 CASSETTE HOUSING INSTALLATION

NOTE: *Observe the mechanical phase and position (see figure) when installing the cassette housing assembly. If these are incorrect, the system will not operate properly even when tape is inserted.*

1. Check that the hole of the control cam are aligned to the deck hole. If necessary, turn the mode motor belt by hand to adjust the position.

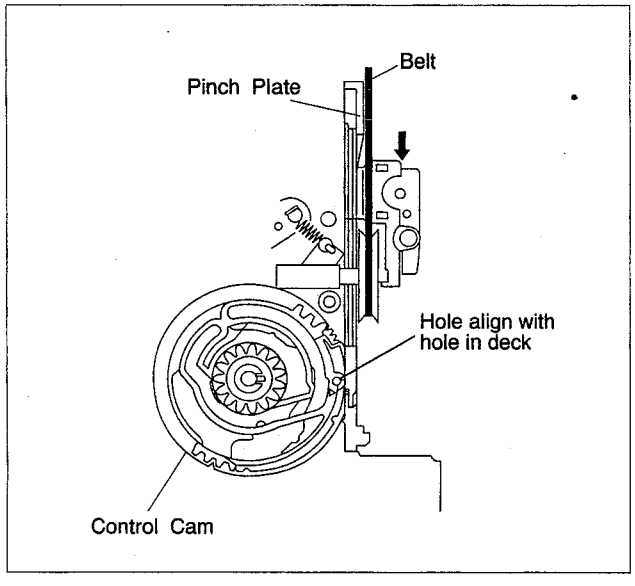


Fig. 1-4-1

1.5 SERVICE POSITION

1.5.1 How to take out the Mechanism and Main board assemblies.

(1) Remove the Top cover, Front panel assy and flat wires of the Front board assy.
(2) Take out 2 screws Ⓐ and 2 screws Ⓑ as shown in Fig.1-5-1.

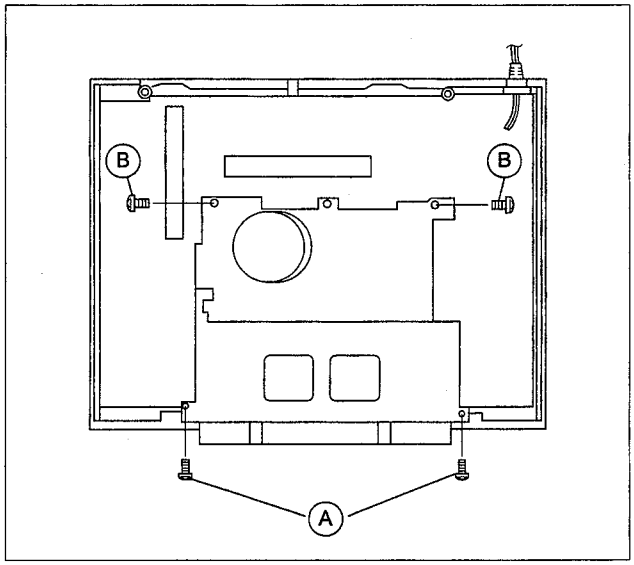


Fig. 1-5-1

(3) Disengage 3 claw ⓐ from the chassis.
(4) Remove the Mechanism assy (including Cassette housing) and Main board assy out of the chassis as shown in Fig. 1-5-2.

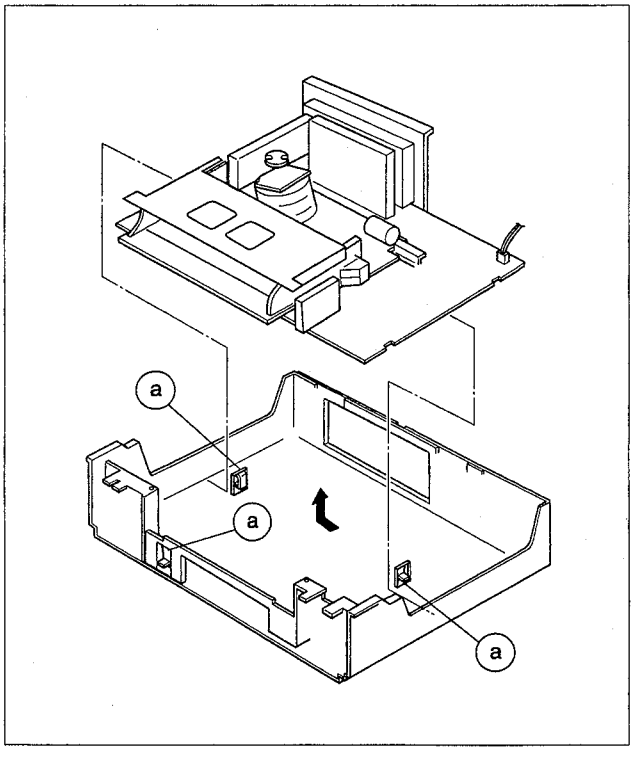


Fig. 1-5-2

(5) Turn over the Mechanism assy and Main board assy then connect CN1 of the Front board assy.
(6) Carry out checks & repairs as necessary as shown in Fig.1-5-3.

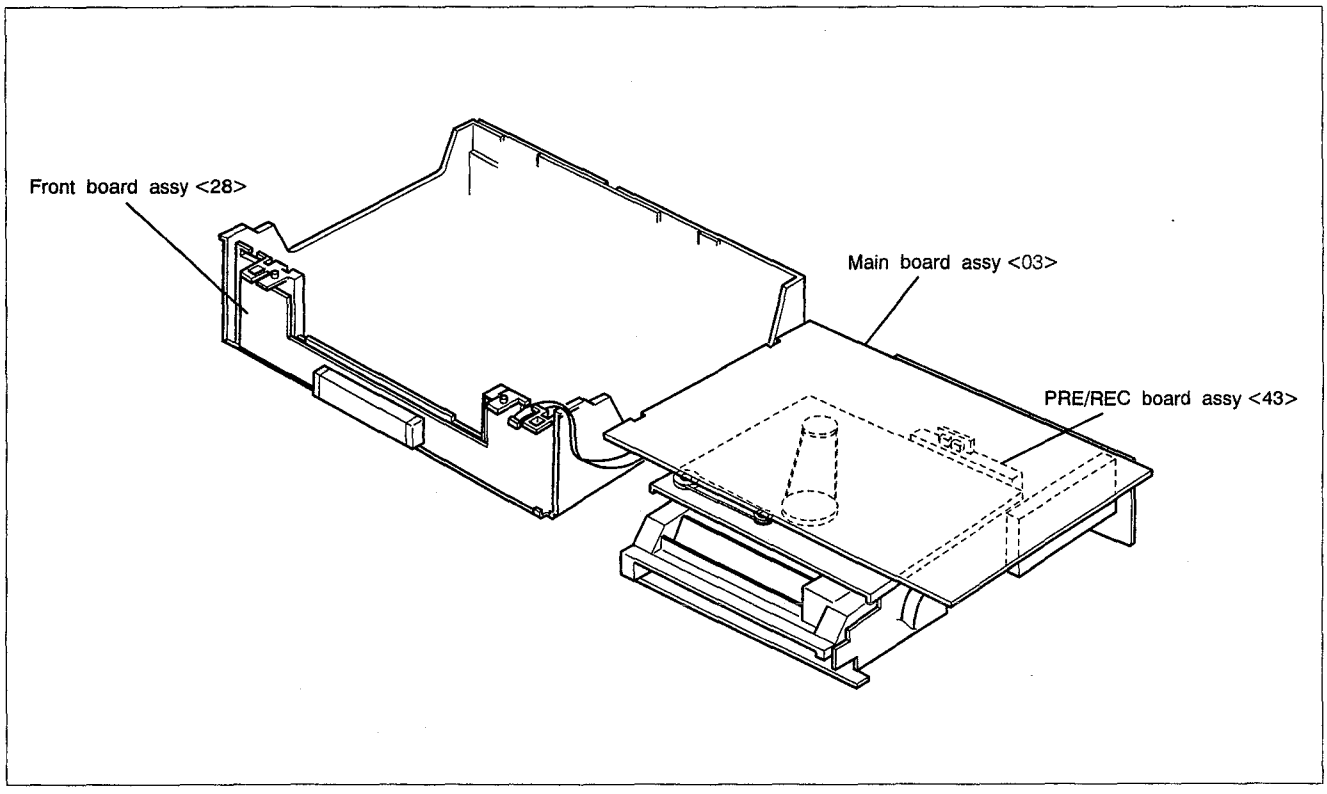


Fig. 1-5-3

1.5.2 Opening on the chassis.

The chassis assy has openings for easy access to the check-points and connector pins as shown in Fig.1-5-4.

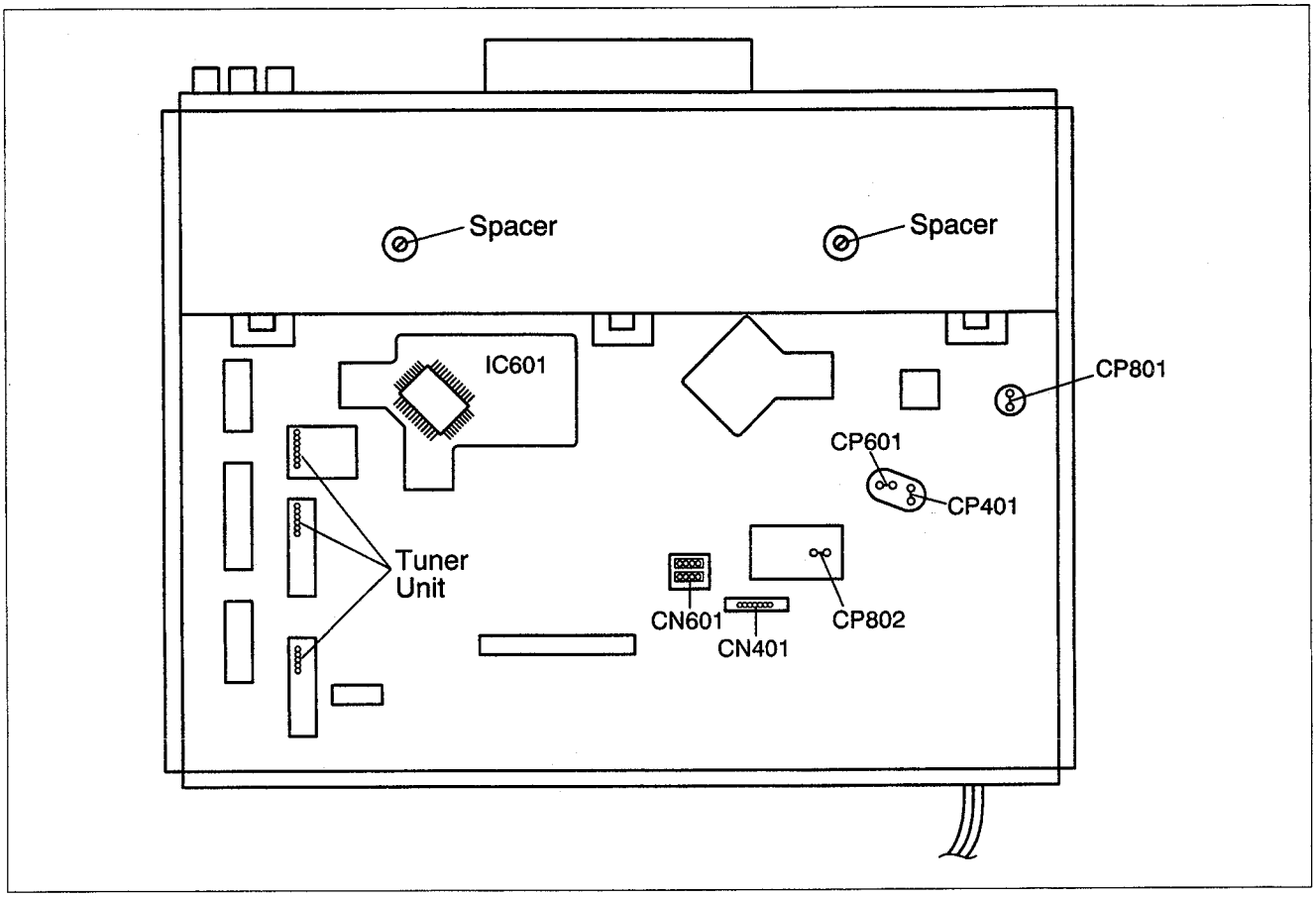


Fig. 1-5-4

1.6 MECHANISM SERVICE MODE

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "MECHANISM SERVICE MODE".

1.6.1 How to set the "MECHANISM SERVICE MODE"

(1) Disconnect VCR from AC.
(2) Remove the Top cover, Front panel assy and cassette housing assy. (See Page 1-2, 1-3)
(3) Connect TP692 (GND) and TP693 (TEST) on the Front board assy with a jump wire.
(4) Connect VCR to AC.
(5) Press the POWER button.
(6) Select the desired operation modes with the operation buttons or remote controller.

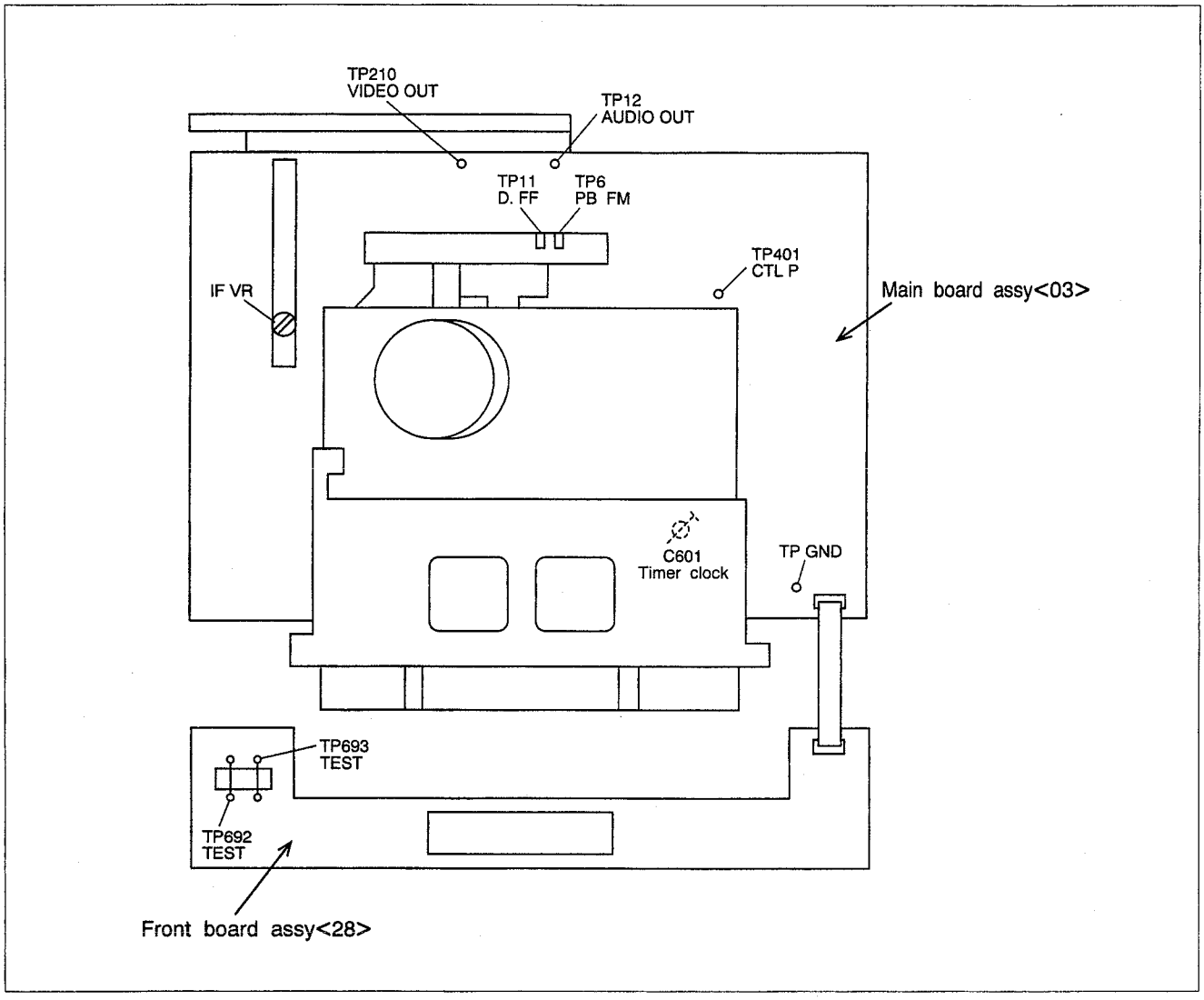


Fig. 1-6-1

1.7 EMERGENCY DISPLAY FUNCTION

This product has the function to store the last two previous emergency faults which can be displayed in the FDP when servicing.

1.7.1 How to display record of an emergency faults

(1) Press "A" button then "N" button of the presetting unit more than 2 seconds. and the two previos emergency faults are shown in the FDP.
(2) Press "N" button of the presetting unit again when return the normal mode.

[Example] E : 01 : 03

- Emergency faults before last
- Emergency faults of the last time

[Example] E : — — : — — ← No record of emergency

1.7.2 Detail of emergency faults

FDP	Symptom	Detect mode	Resulting mode
E : 01	Loading motor rotates for more than 8 Sec without shift to next mode.	Loading	POWER OFF
E : 02	Loading motor rotates for more than 8 Sec without shift to next mode.	Unloading	POWER OFF
E : 03	SUP or TU REEL FG input is absent (for more than 4 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 04	DRUM FF input is absent(for more than 3 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP
E : 06	CAPSTAN FG input is absent(for more than 1 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 07	No SWD5V/12V	POWER ON	POWER OFF

Table 1-7-1 EMERGENCY FAULTS

1.7.3 How to clear emergency record

Press the CLEAR button on the remote controller in the emergency record display mode, and the record of the emergency fault(s) is cleared.

SECTION 2
MECHANISM ADJUSTMENT

2.1 PREPARATION

2.1.1 Precautions

(1) Disconnect VCR from AC power before soldering.
(2) Avoid imparting stress to wires when disengaging connectors.
(3) Determine and correct the cause of difficulty before proceeding to adjustments. Do not disturb settings unnecessarity.
(4) Use care not to damage tabs, claws, etc during repairs.
(5) Install the cassette housing assy only when the mechanism is in the MECHANISM ASSEMBLING MODE position.
(6) When installing the Front panel assy,be sure to engage the housing door with the door opener of the cassette housing assy.
If this is omitted, the cassette door will not open at Eject and the cassette can not be removed. (See SECTION 1 DISASSEMBLY.)

2.1.2 Check without cassette housing assy.

Mechanism operations can be observed easily by removing the cassette housing assy. Use the MECHANISM SERVICE MODE (See SECTION 1 DIASSEMBLY)

2.1.3 Manual removal of loaded tape

When the deck enters the emergency mode with cassette tape loaded and it can not be ejected by pressing the EJECT button, take out of the cassette tape according to the following procedure.

(1) Disconnect the power cord from AC outlet then take out the Top cover and Front panel assy.
(2) Turn the mode motor on the Main deck assy by hand in the unloading direction to where the pole base assy (supply and take-up) is positioned below the cassette tape. At that time, pay careful attention to the tape not to get soiled with grease.
(3) Take out 4 screws of the cassette housing assy. (See SECTION 1 DISASSEMBLY)
(4) Remove the cassette housing with slackened tape and guard panel of cassette.
(5) Wind up the tape by turning the reel hub(either supply or take-up side for convenience) from the bottom of the cassette, and remove the cassette tape.

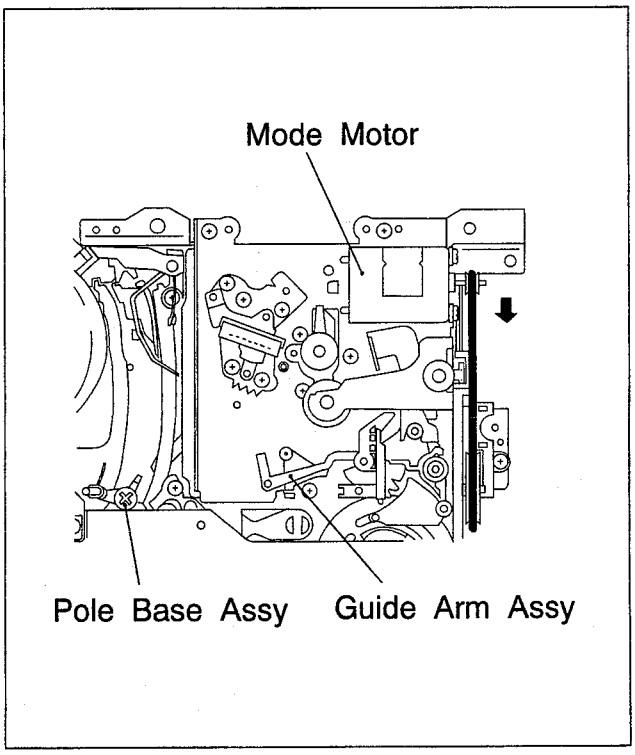


Fig. 2-1-1

2.1.4 Test Equipment

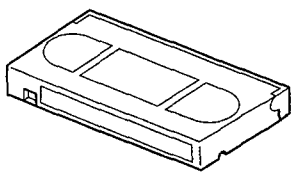
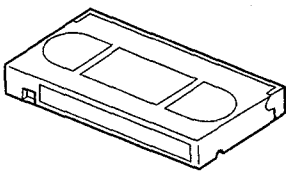
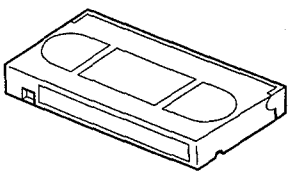
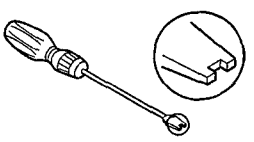
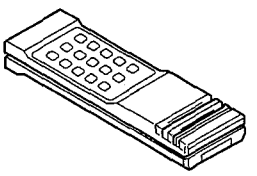
Alignment tape (SP) 4822 397 30262	Alignment tape (LP) 4822 397 30261	Back tension cassette gauge 4822 395 90615	A/C head positioning tool 4822 395 90916
			
Roller driver 4322 395 90904	Presetting unit 4822 395 90915		
			

Table 2-1 Test equipment

2.2 MAIN MECHANISM PARTS

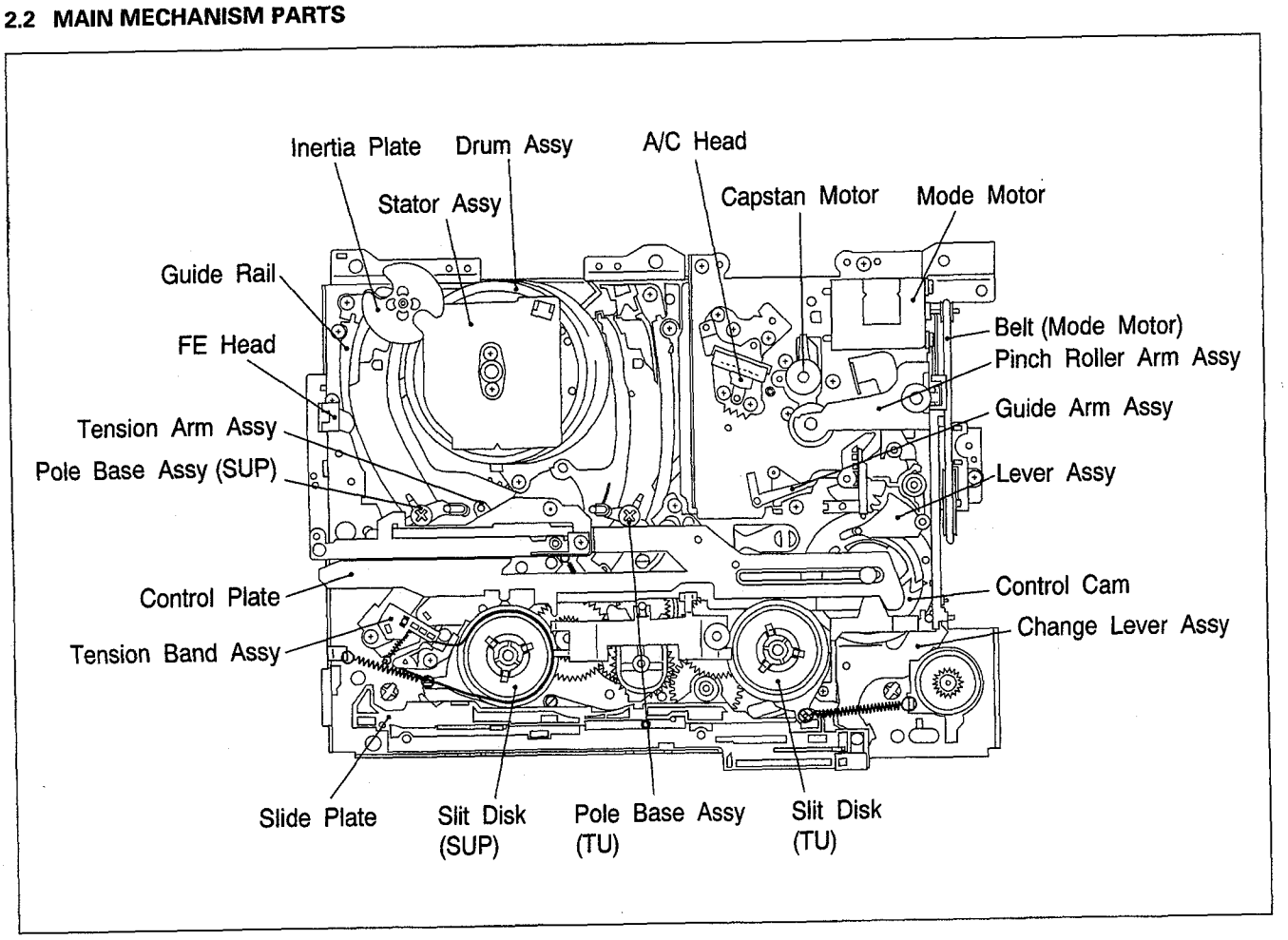


Fig. 2-2-1 Top view of main deck

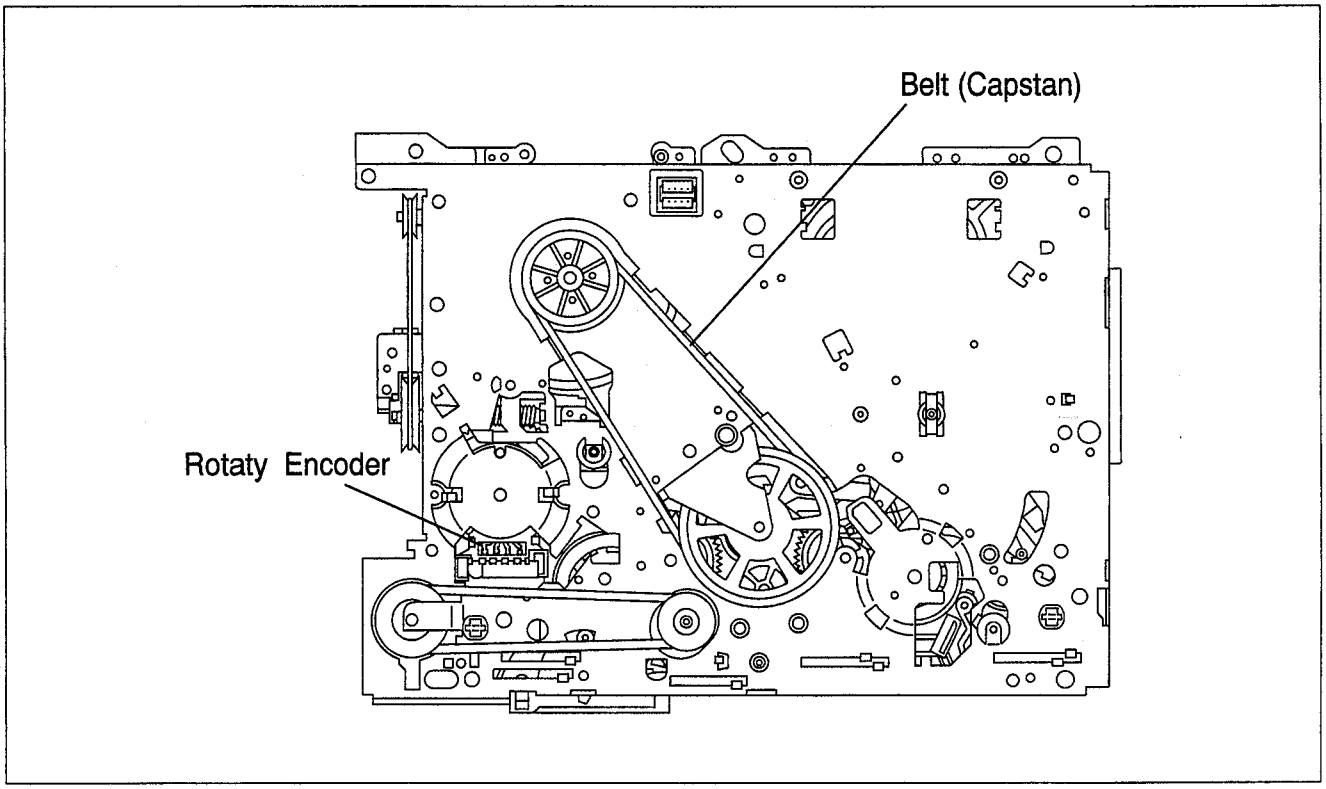


Fig. 2-2-2 Bottom view of main deck

2.2.1 Cleaning

Periodic cleaning of the tape transport system is desirable, but ordinarity not feasible in practice. Therefore, perform cleaning when a set is brought in for repairs or maintenance. Contamination of the video heads, tape guides and brush can detract from playback picture quality and in extreme cases, even damage the tape. For cleaning, use a finemesh cotton cloth(about the texture of a while dress-shirt) moistened in alcohol. It is recomended to also clean thetape tension posts and capstan.

- To clean the video heads, press the moistened cloth gently against the upper drum with fingertip and turn the drum gy hand.
- Do not use a vertical stroke, as this may damage the heads.

2.2.2 Lubrication

Oil and grease do not normally require periodic replenshing. Apply only when replacing lubricated parts(also clean and replace lubrication of mating parts if soiled). For parts and points to apply oil and grease, refer to the exploded views of the mechanism assy. Before oiling, clean with alcohol. Apply one or two drops of oil. Avoid excess oil.

1. Grease is not required for a replacement cassette housing assy, as this has been applied at the factory.

NOTE : *Stir grease that has been stored for an extended period.*

2.3 INSPECTION AND MAINTENANCE

This product employs rotary and moving parts which wear out in the course of usage. Periodic inspection, cleaning, lubrication and maintenance are therefore important for ensuring maximum performance. Worn parts must also be replaced as and when required.

2.3.1 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assy	★○	○
	A/C head	★○	★○
	Lower drum motor assy	★	★○
	Pinch roller arm assy	★	★
	Full erase head	★	★
	Tension arm assy	★	★
	Guide arm assy	★	★
Drive	Capstan motor		○
	Belt (Capstan)	○	○
	Belt (Mode motor)		○
	Mode motor		○
	Slit disk (supply, take-up)		○
	Clutch unit (supply, take-up)		○
	Worm gear assy		○
	Control plate		○
	Slide plate		○
Other	Brush assy	★○	★○
	Tension band assy	○	○
	Rotary encoder		○

★ : Cleaning
○ : Inspection or Replacement if necessary

Table 2-3-1

2.4 DISASSEMBLY/ASSEMBLY PROCEDURE OF MECHANISM

2.4.1 Precaution before disassembling mechanism

This mechanism has an exclusive operation mode provided for disassembling and installation of the mechanism (MECHANISM ASSEMBLING MODE), and it is suggested to set the mechanism to this mode before disassembly and installation. The exclusive mechanism operation mode is not generally used and becomes available by manual setting only. Then this procedure starts with the condition that the cabinet parts, cassette housing assy and PRE/REC board assy have been removed.

2.4.2 How to set the exclusive mechanism operation mode (MECHANISM ASSEMBLING MODE)

(1) Turn the mode motor belt by hand.
(2) Confirm that the hole of the control cam are aligned to the deck hole as shown in Fig.2-4-1.

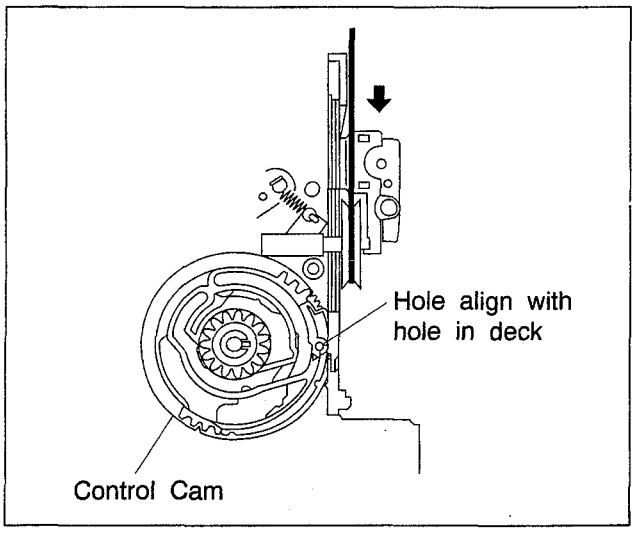


Fig. 2-4-1

2.5 MAIN PARTS REPLACEMENT OF MECHANISM

2.5.1 Pinch Roller Arm ASSY

(1) Remove the slit washer.
(2) Tilt up the pinch roller assy in direction of arrow.

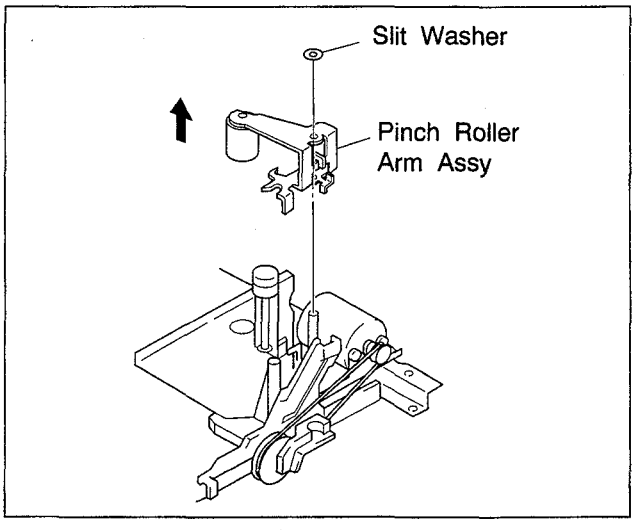


Fig.2-5-1

2.5.2 A/C Head

1. Removal

(1) Take out 2 screws (A).

(2) Remove the A/C head with head base.

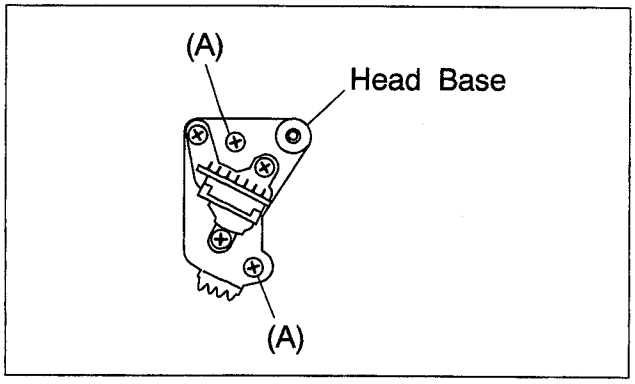


Fig.2-5-2

(3) When replacing the A/C head only,remove 3 screws (B), use care not to misplace the 3 springs.

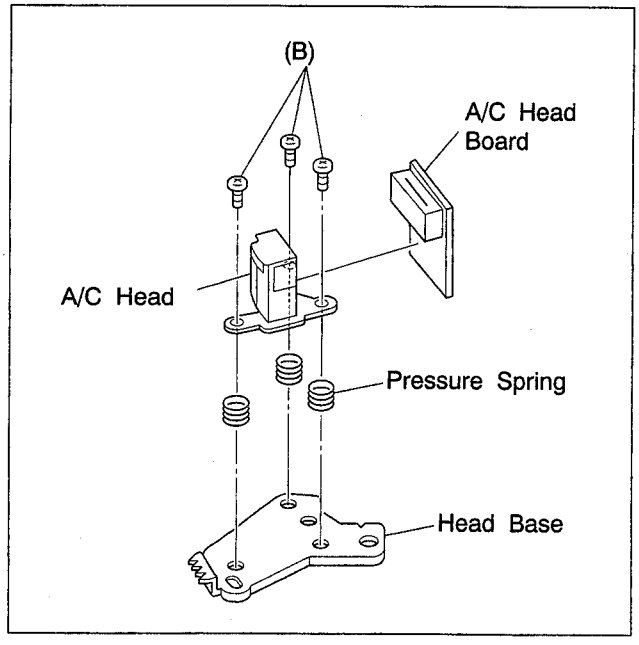


Fig.2-5-3

2. Installation

(1) Temporarily set A/C head height as indicated in Fig. 2-5-4.

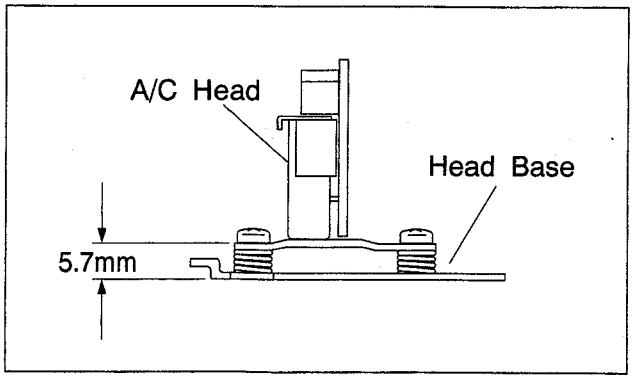


Fig.2-5-4

NOTES:

- *It is very important to correctly adjust the control pulse and audio signal in addition to the mechanical tape path.*
- *Perform interchangeability adjustments after electrical adjustments.*

2.5.3 Pinch Plate

1. Removal

(1) Disengage 2 claws, then remove the pinch plate.

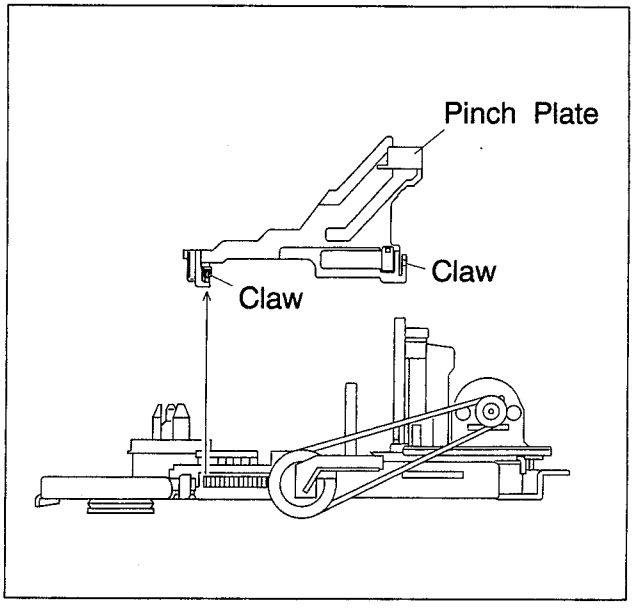


Fig.2-5-5

2. Installation

(1) When installing pinch plate, align rack of pinch plate and triangle mark of control cam as indicated in Fig.2-5-6.

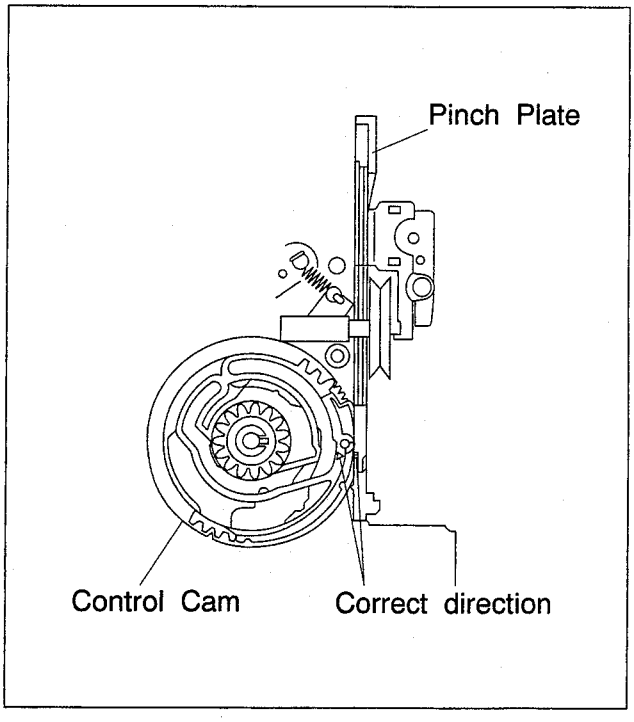


Fig. 2-5-6

2.5.4 Mode Motor

(1) Disengage the belt between mode motor and worm gear.
(2) Take out 2 screws (A) then remove the mode motor.

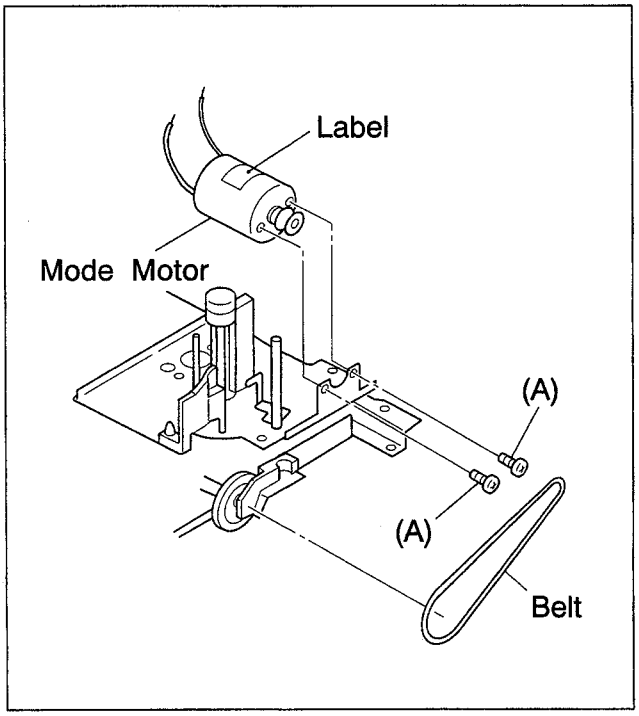


Fig.2-5-7

2.5.5 Lever Assy,Sub Deck Assy,Capstan Motor

(1) Take out 1 slit washer, then remove the lever assy.
(2) Disengage the belt (capstan motor) from bottom of mechanism assy first as indicated in Fig.2-5-10.
(3) Take out 3 screws (A) and remove the sub deck assy as indicated in Fig.2-5-8.
(4) Take out 3 screws (B) and remove the capstan motor from the sub deck assy as indicated in Fig.2-5-9.

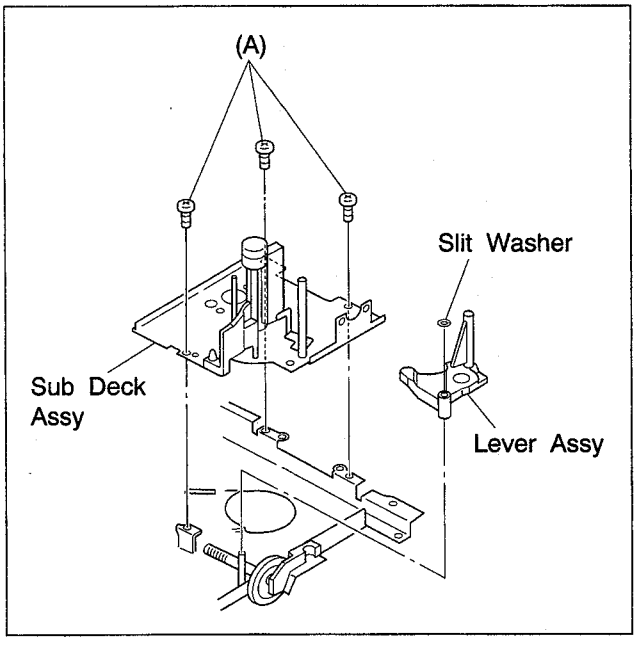


Fig.2-5-8

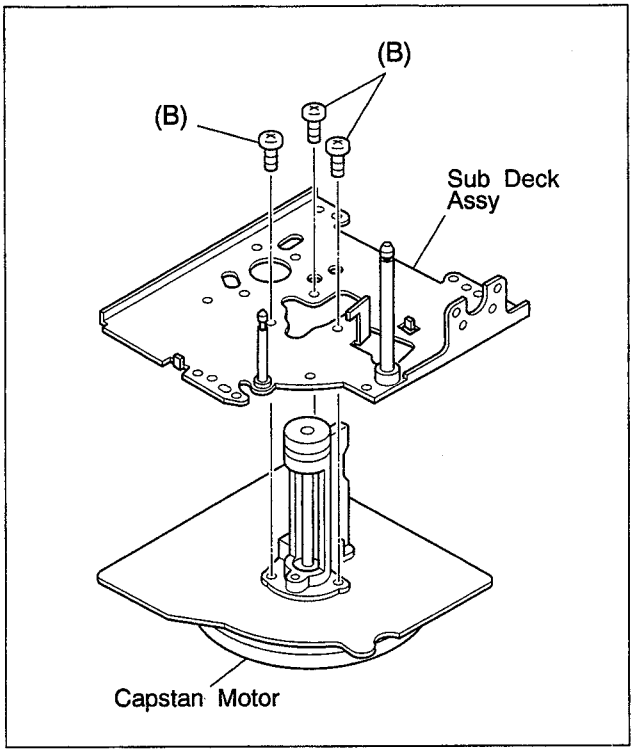


Fig.2-5-9

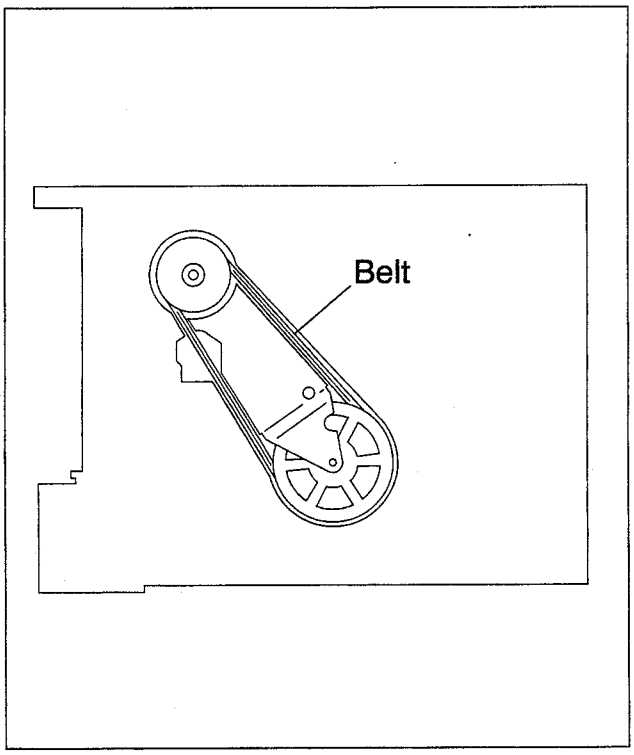


Fig.2-5-10

2.5.6 Control Bracket-1, Earth Pllate

(1) Take out 1 screw (A) and 1 screw (B).
(2) Remove the control bracket-1 and earth pllate.

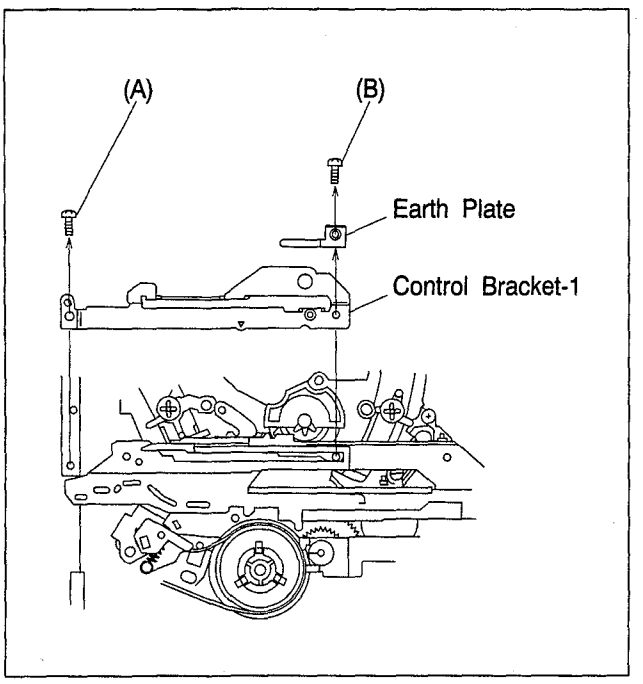


Fig.2-5-11

2.5.7 Reel Bracket, Slit disk (take-up)

(1) Take out 2 slit washers.
(2) Remove the reel bracket and slit disk(take-up).

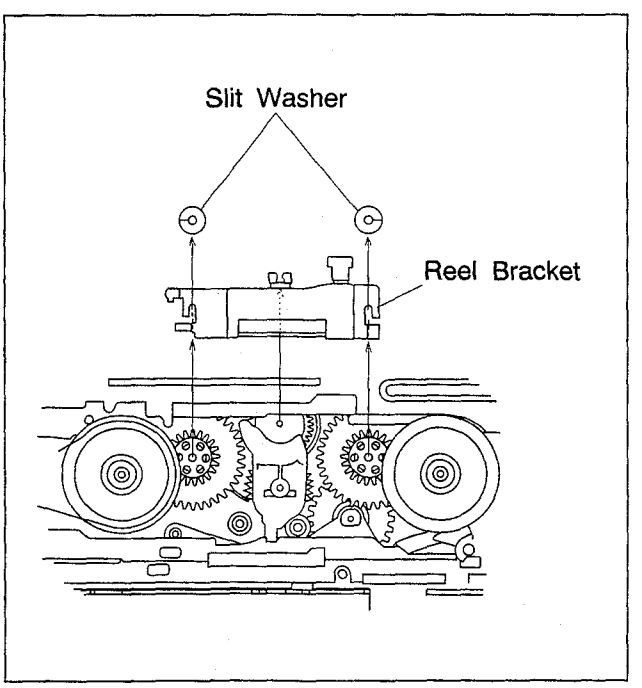


Fig.2-5-12

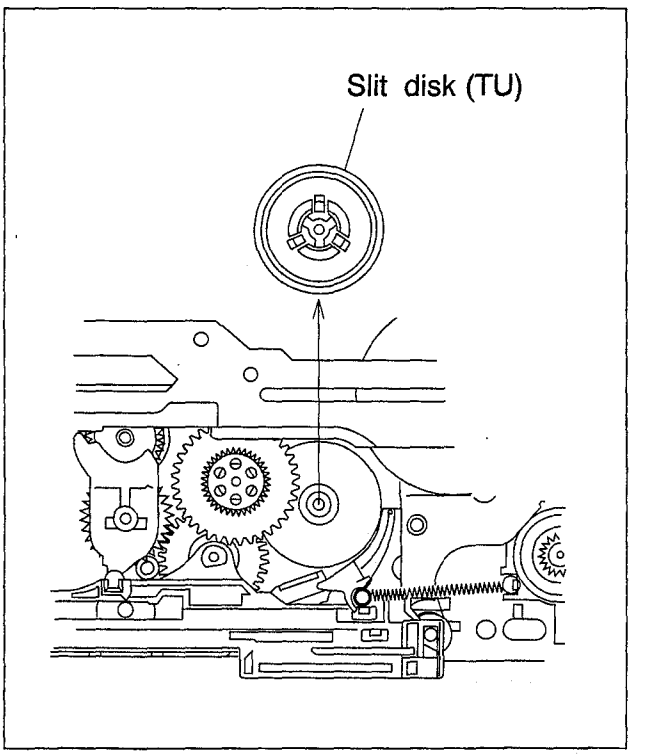


Fig.2-5-13

2.5.8 Control Bracket-2, Control Plate

(1) Take out 1 screw (A) and remove the control bracket-2.
(2) Take out 1 slit washer.
(3) Disengage 2 claws and remove the control plate.

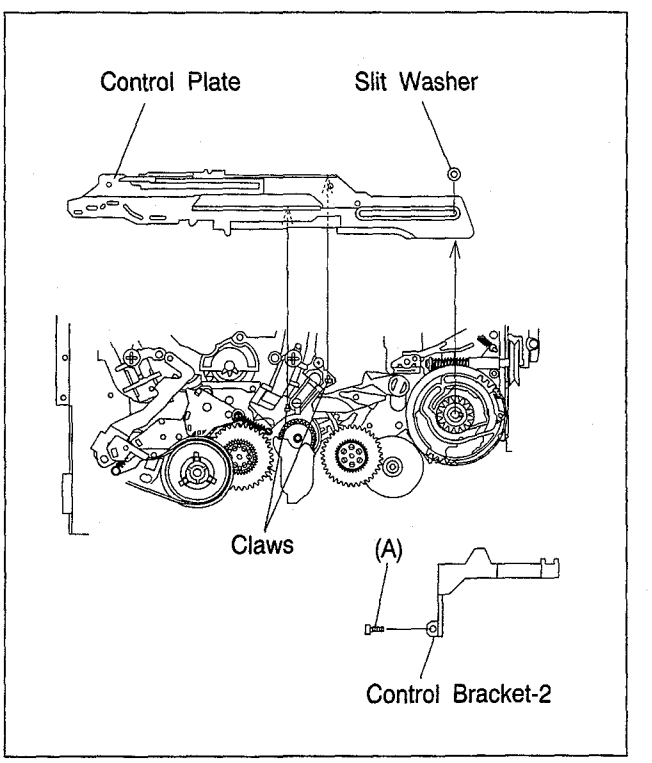


Fig.2-5-14

2.5.9 Sub Brake(take-up), Control Cam

(1) Disengage 1 spring (a) and 1 claw then remove the sub brake (take-up).
(2) Disengage 1 claw and remove the control cam.

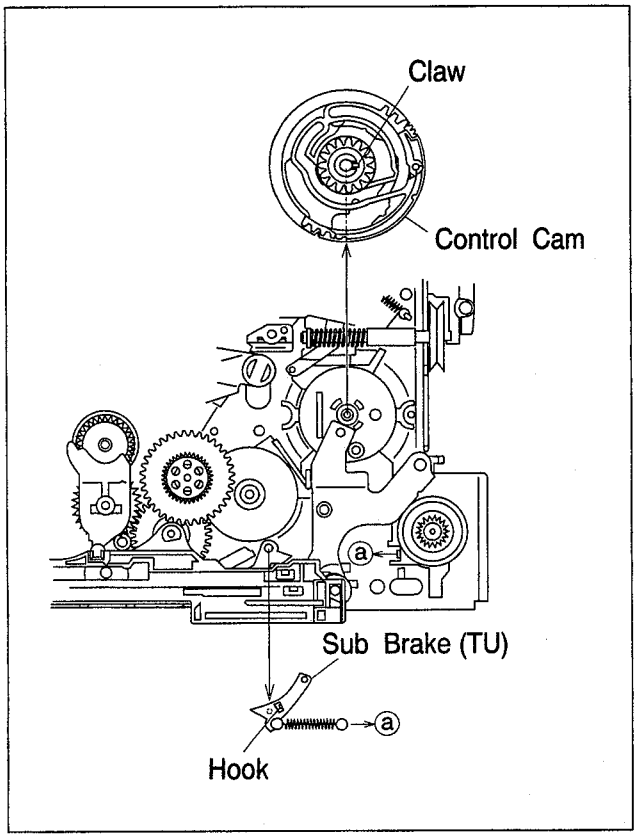


Fig.2-5-15

2.5.10 Slide Plate

(1) Disengage 7 claws from bottom of the mechanism assy and remove the slide plate.

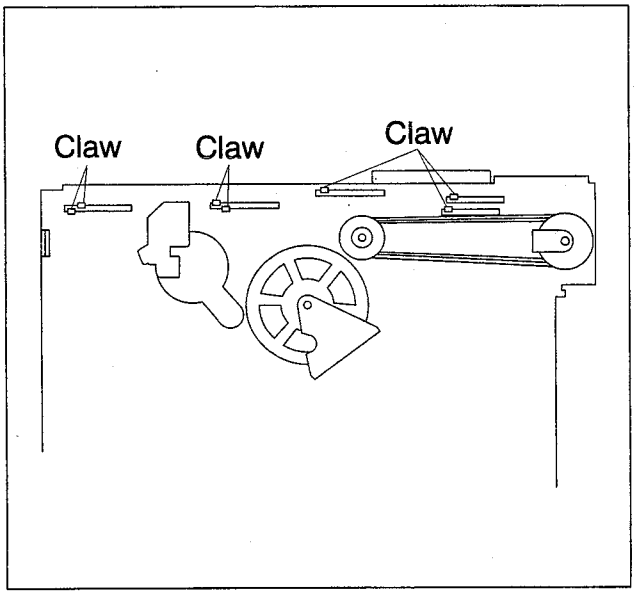


Fig. 2-5-16

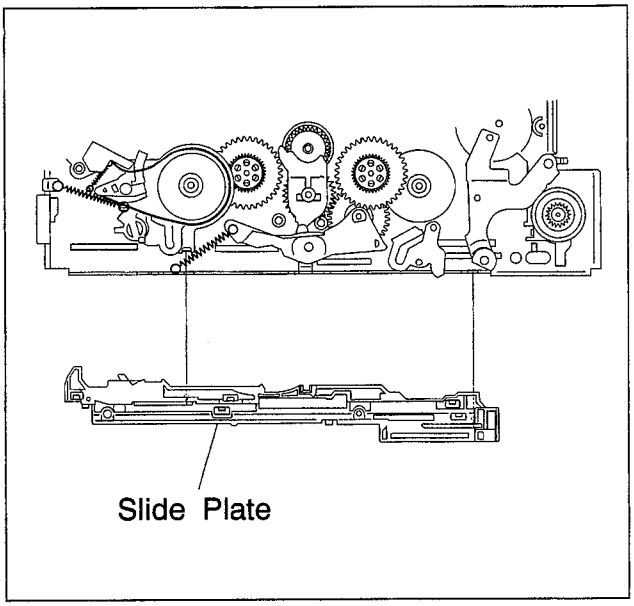


Fig. 2-5-17

2.5.11 Change Lever, Rotary Encoder

(1) Remove the change lever.
(2) Disengage 2 claws and remove the rotary encoder.

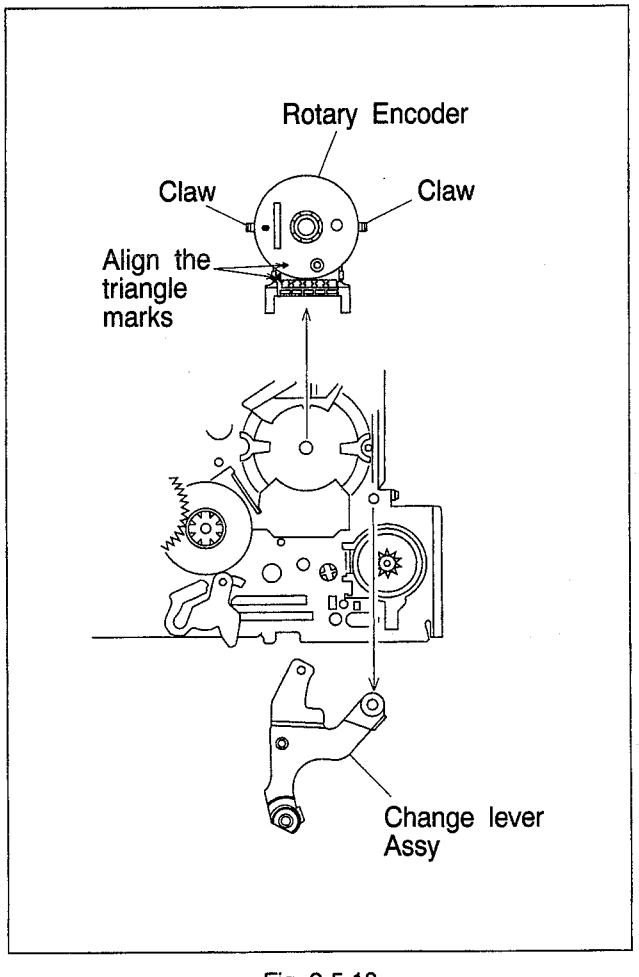


Fig. 2-5-18

2.5.12 Sub Brake (supply), Tension Band Assy, Tension Arm Assy, Take-up Lever Assy, Slit Disk(supply)

(1) Disengage 1 spring (a).
(2) Disengage 1 claw and remove the sub brake (supply).
(3) Take out 1 screw (A), spring (c) and slit washer.
(4) Remove the tension arm assy with tension band assy.
(5) Disengage 1 spring (b) and remove the take-up lever assy.
(6) Remove the slit disk(supply).

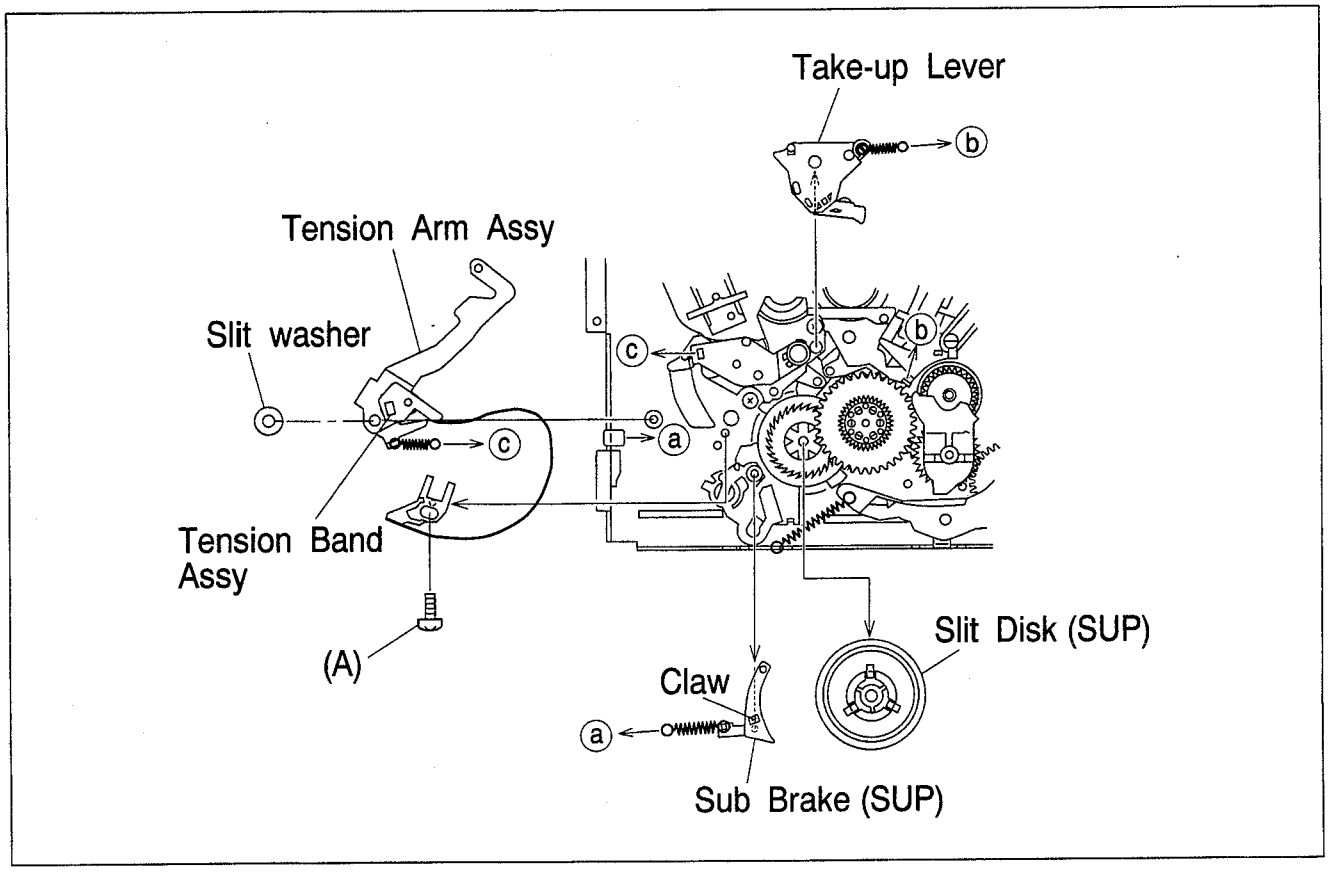


Fig. 2-5-19

2.5.13 Take-up Head, Tension Arm Lever

(1) Remove the take-up head and tension arm lever.

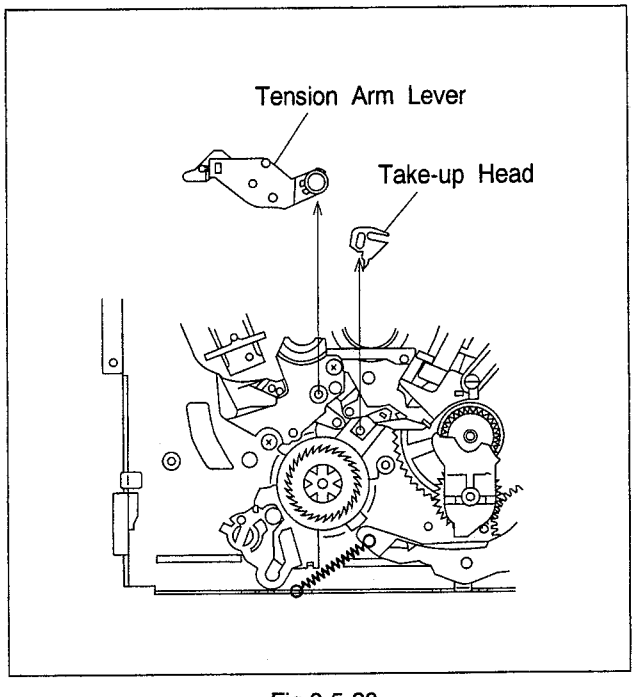


Fig.2-5-20

2.5.14 Guide Rail

(1) Take out 5 screws (A) and 1 screw (B).
(2) Disengage 4 claws and remove the guide rail.

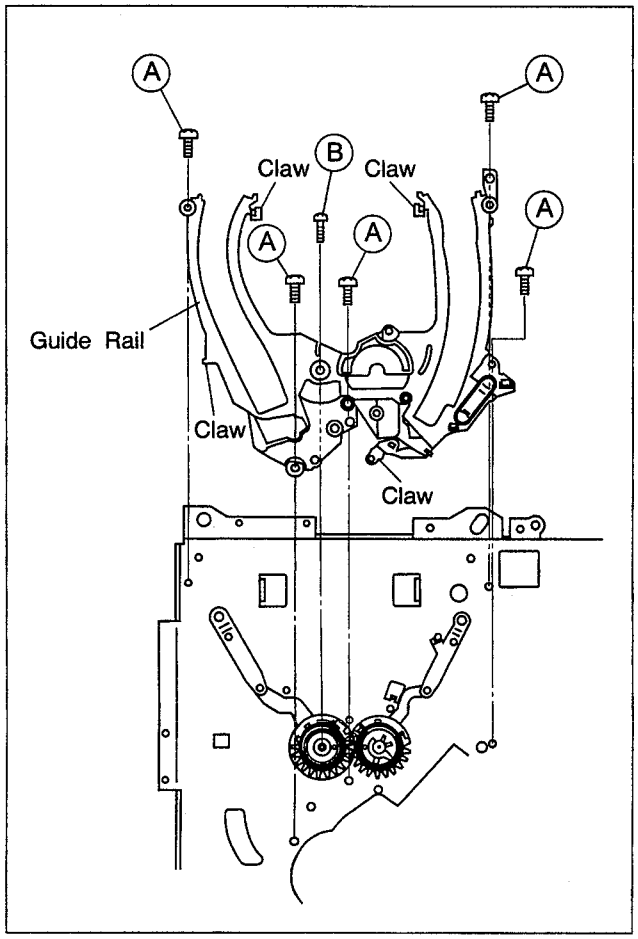


Fig. 2-5-21

2.5.15 Stator Assy

(1) Take out 2 screws (A).
(2) Raise the stator assy in the direction indicated by the arrow to remove it (also remove the inertia roller).
(3) Remove the flat cable.
(4) To reinstall,first secure the flat cable,then insert 2 screws (A).
(5) After reinstalling, be sure to perform PB switching point adjustment(See SECTION 3 ELECTRICAL ADJUSTMENT).

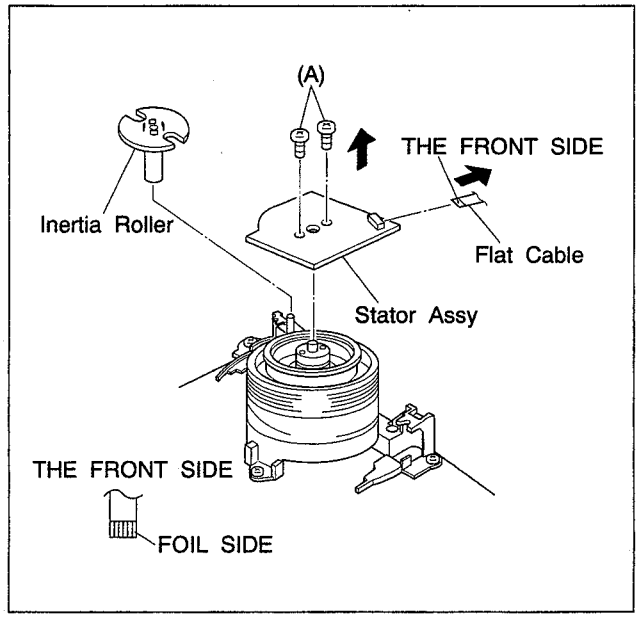


Fig. 2-5-22

NOTE : *When refitting the connector, check that the flat wire is inserted correctly.*

2.5.16 Rotor Assy

(1) Remove the stator assy.
(2) Take out 2 screws (B) and remove the rotor assy.

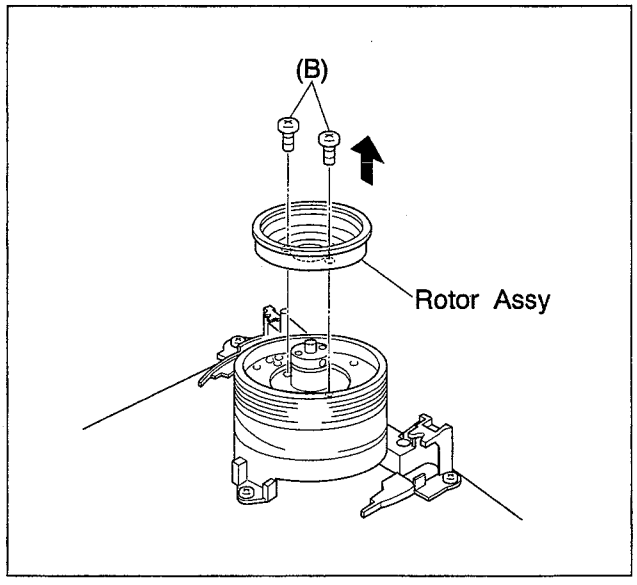


Fig.2-5-23

(3) Align the upper dum assy and rotor assy phase as indicated in Fig.2-5-24.
(4) Overlap holes (a) of the upper drum assy with holes (b) of the rotor assy (align holes in 3 locations) and secure with 2 screws (B) as indicated in Fig.2-5-23.

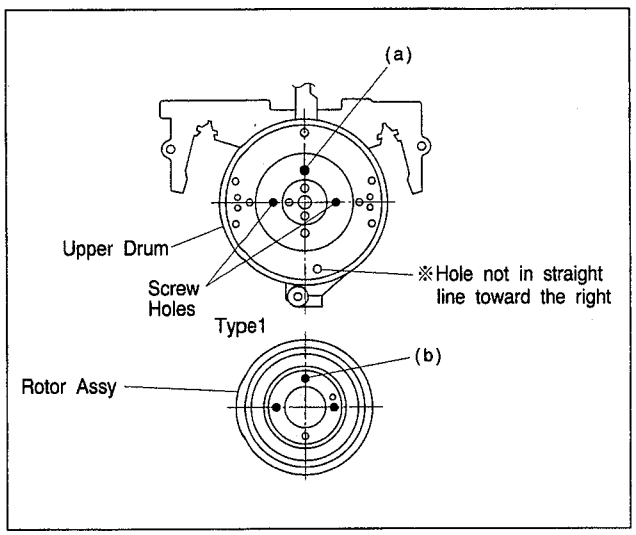


Fig. 2-5-24

2.5.17 Upper Drum Assy

1. Removal

(1) Remove the stator assy and rotor assy.
(2) Use a 1.5 mm hexagonal wrench to loosen the collar assy screw and remove the collar assy.
(3) Remove the upper drum assy and use tweezers to remove the Washer.

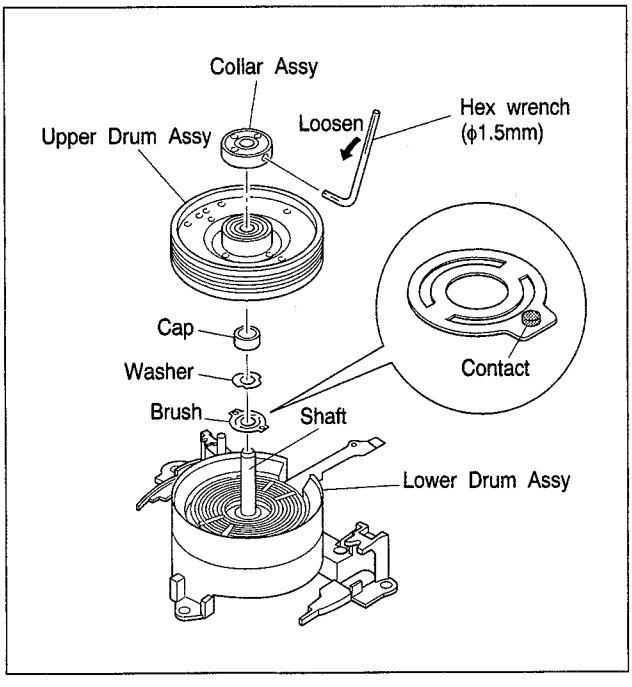


Fig. 2-5-25

NOTE : *If the Brush is replaced, do not apply the grease to the contacts.*

2. Installation

(1) Use an air brush to clean the lower drum assy and the coil section of the new upper drum assy.
(2) Set a new washer on the drum shaft as indicated in Fig.2-5-25.

NOTE : *Be sure to use the new washer when replace the upper drum assy.*

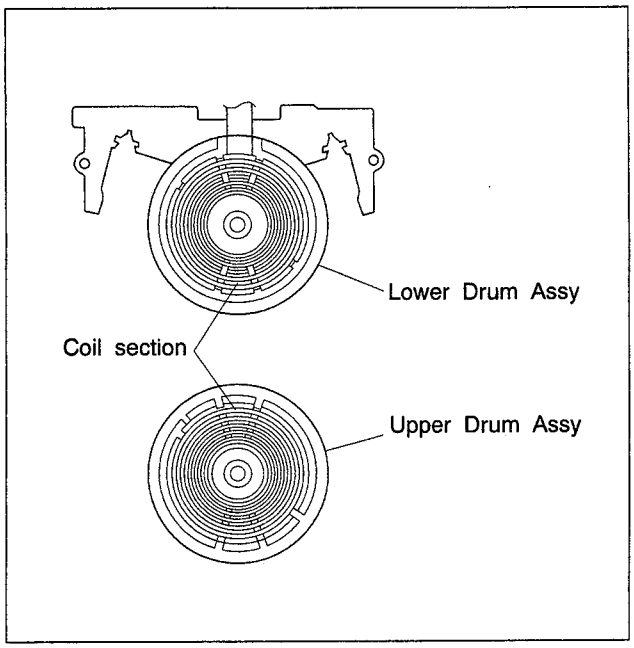


Fig.2-5-26

(3) Note the top and bottom of the collar assy and determine the position as indicated in Fig.2-5-27.

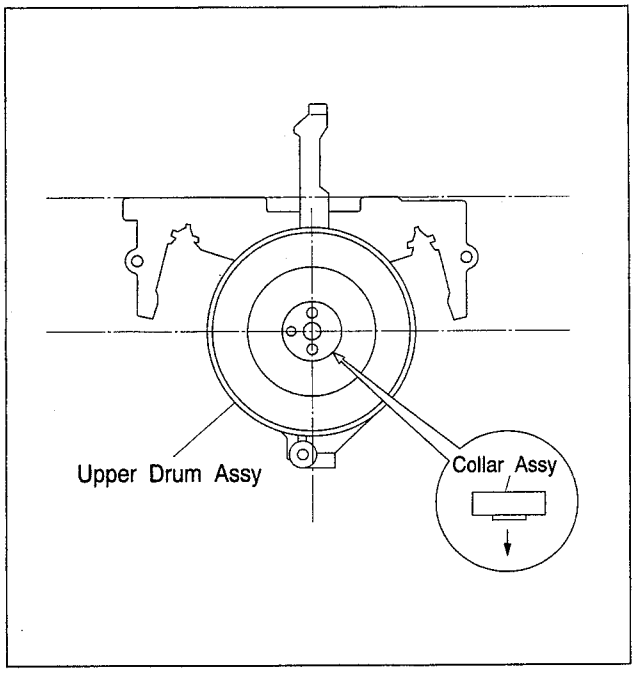


Fig.2-5-27

(4) While pressing the collar assy evently from above with your fingertips, secure the hexagonal screw.

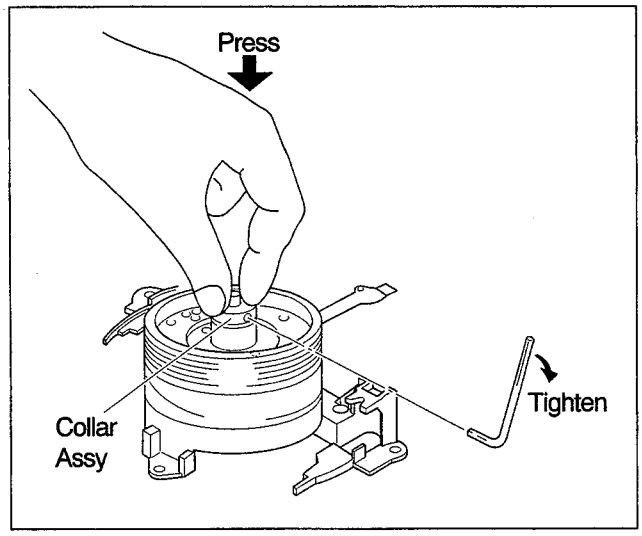


Fig.2-5-28

(5) After installing, gently turn the upper drum by hand and confirm normal rotation.
(6) Install the rotar assy and stator assy.
(7) Clean the upper and lower drum assies and perform the following adjustments;
- PB switching point adjustment
- Slow tracking preset adjustment
- Interchangeability adjustment

2.6 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

2.6.1 Precaution

The rotary encoder and syscon circuit are closely interrelated.Therefore, the rotary encoder and control cam conection determines the operations of mechanical parts such as plates, gears, brakes, etc. Correct positioning of these parts is essential for smooth tape loading and mechanical operations.

2.6.2 Loadidg Arm Assy (supply, take-up)

(1) Install the supply loading arm assy and the take-up loading arm assy so that their positioning markings on the respective gear face each other and the holes of their arms correspond to the holes on the main deck assy respectively.
(2) After setting the guide rails, engage the pole base assies with the tip of the loading arms respectively. Then, enter the mechanism into the unloading mode to return the pole base assies to the front position.
(3) Reassemble the peripheral parts of the guide rail as originally.

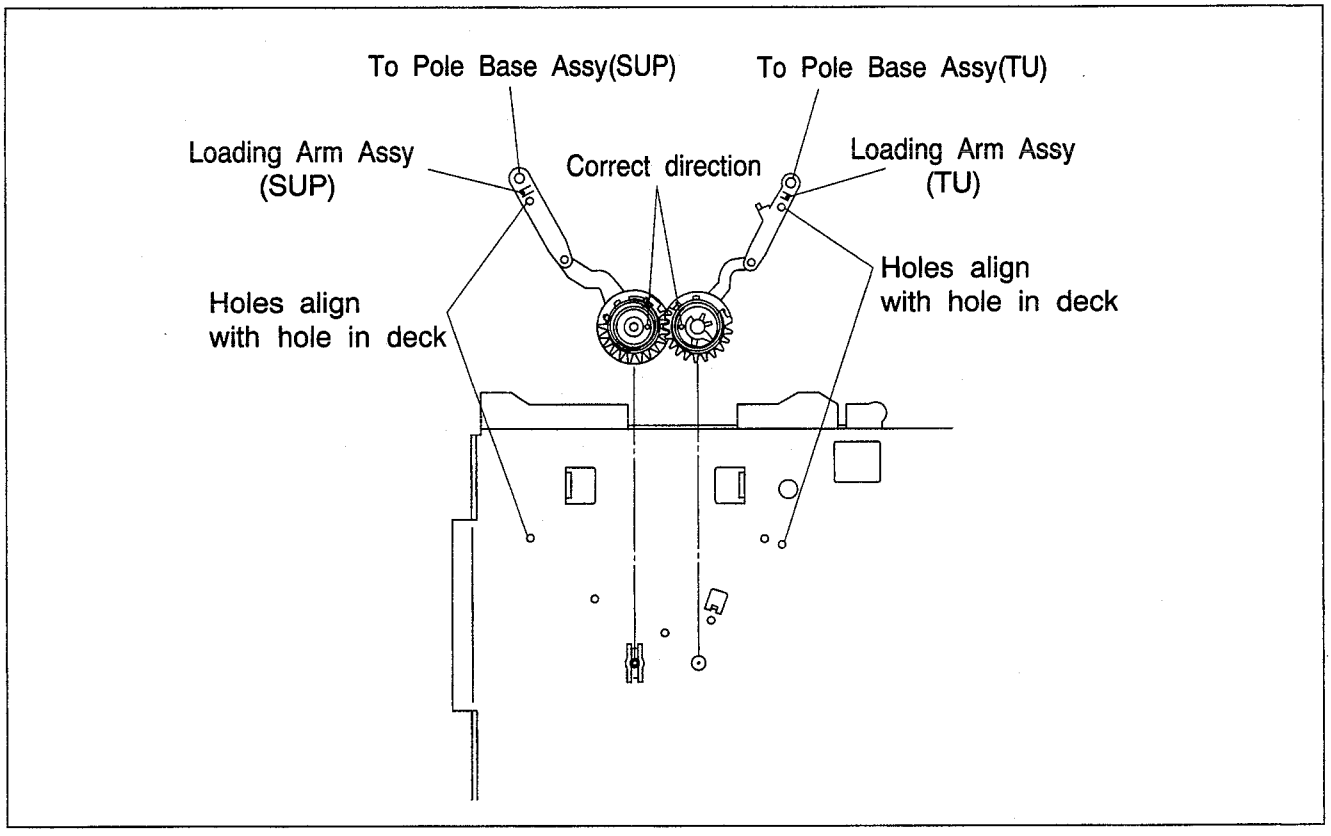


Fig. 2-6-1

2.6.3 Rotary Encoder, Change Lever, Control Cam

(1) When reinstalling the rotary encoder, adjust its position so as to fit the triangle marks each other and push it deep untill it is locked by the pawls.
(2) When reinstalling the change lever, set it so as to make its positioning hole correspond to the hole of the main deck assy.
(3) When re-engaging the control cam, lower the capstan brake assy while setting it so as to make its positioning hole correspond to the hole of the main deck assy.

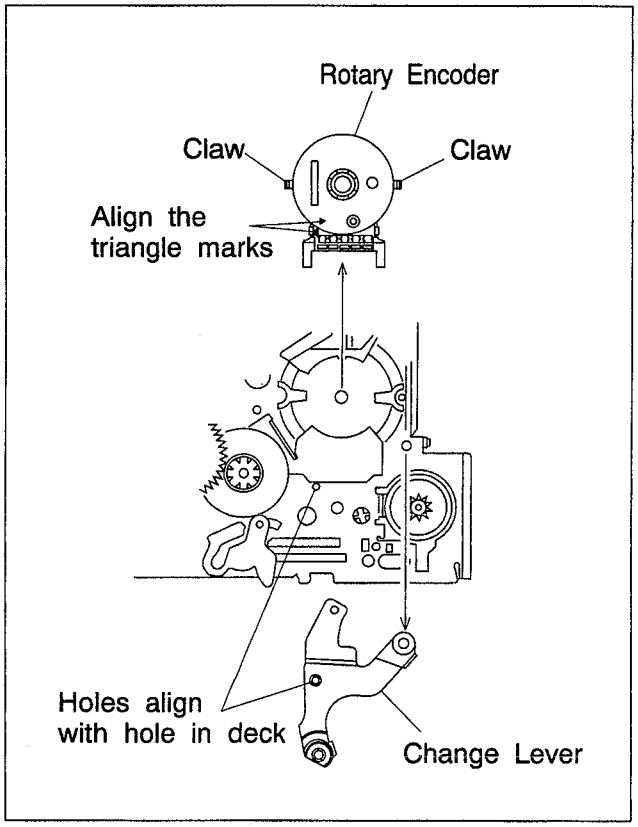


Fig. 2-6-2

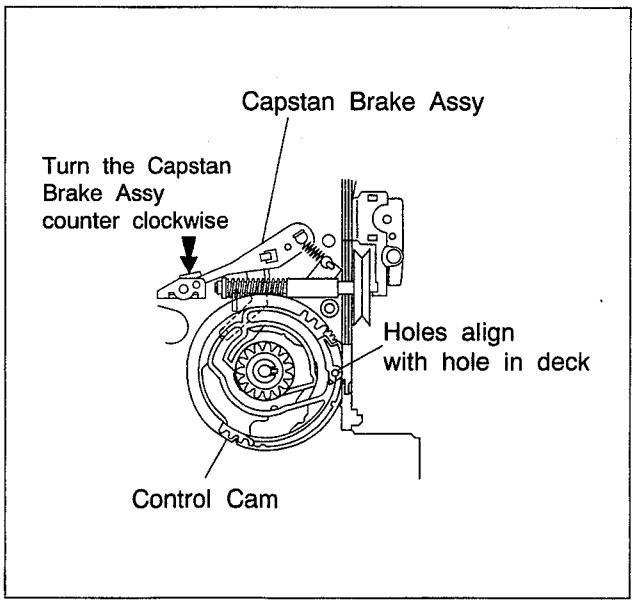


Fig. 2-6-3

2.6.4 Slide Plate

(1) Lower both the main brake assies (supply and take-up) untill they touch the edge of the main deck assy while reinstalling the slide plate so as to make the respective positioning holes of the main brake assies correspond to the holes on the main deck assy.

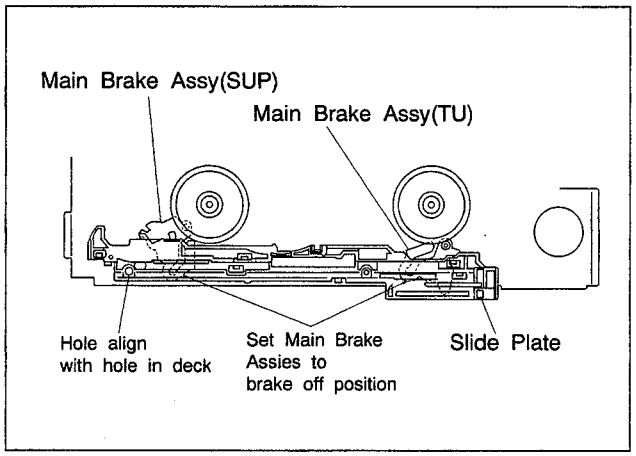


Fig.2-6-4

2.6.5 Control Plate

(1) Reinstall the control plate so as to set the two positioning holes of it on the holes on the main deck assy respectively and to set the positioning hole of the take-up lever on the hole of the main deck at the same time. When adjusting the hole position of the take-up lever, use a pair of tweezers to hold and move it since it is pulled by a tension spring.
(2) After reinstalling the control plate, fix it with the slit washer,control bracket-1 and -2.

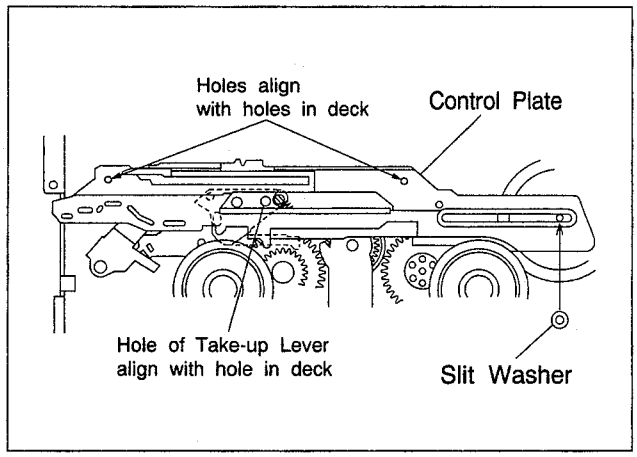


Fig. 2-6-5

2.7 TAPE INTERCHANGEABILITY ADJUSTMENT

NOTES: • *This adjustment is extremely important. However, it is normally not required during routine service. Perform only after replacing major components (A/C head, upper/lower drum assy, pole base assy, etc).*

• *Before using costly alignment tape, use a spare tape and confirm correct operation of the tape transport.*

2.7.1 Tape pattern

(1) Connect the oscilloscope to TP6(PB FM) on the PRE/REC board. Use TP11(D.FF) on the PRE/REC board as a trigger.

(2) Playback the SP stairstep portion of the alignment tape [MHPE]. Confirm that the FM waveform appears as indicated in Fig.2-7-1.

(3) Set the manual tracking position by simultaneously pressing the CH "–" and "+" buttons.

(4) Operate the tracking adjustment (press the CH buttons during playback) and set for maximum playback FM waveform.

(5) By operating the CH button, vary the FM waveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape as shown in Fig.2-7-1.

(6) When the FM waveform does not remain flat during this process, first slightly loosen the set screw located at the bottom of the guide rollers.Using the guide roller adjustment tool (Roller driver), adjust the supply and take-up guide rollers (refer to Fig.2-7-2) to obtain the correct waveform as indicated in Fig.2-7-3.

(7) By pressing the CH buttons several times, vary the FM waveform output from maximum to minimum (and vice versa) gradually, and confirm that the variation proceeds in flat shape, as shown in Fig.2-7-3.

(8) Record the signal and play it back in the SP mode, confirm that the FM waveform is flat in both mode.

(9) After adjustments, tighten the set screw of the guide rollers.

(10) Confirm that the tape wrinking does not occur at the roller upper or lower limits as indicated in Fig.2-7-4.

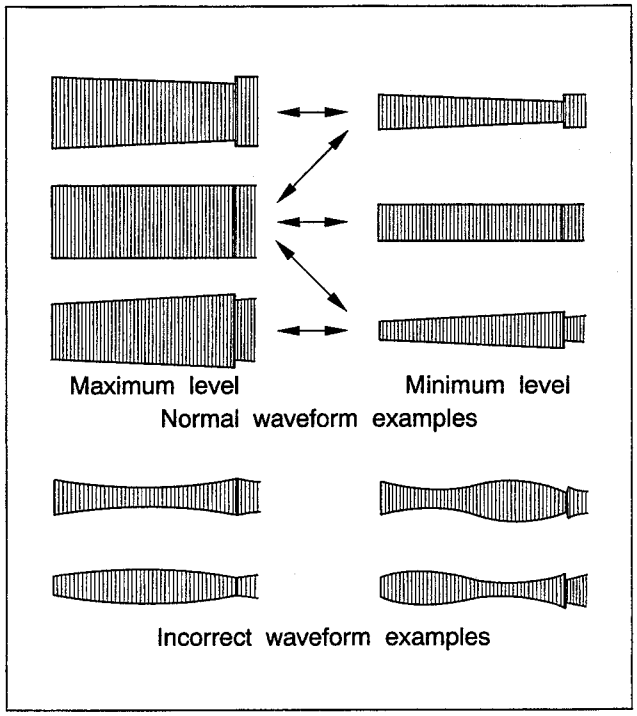


Fig. 2-7-1

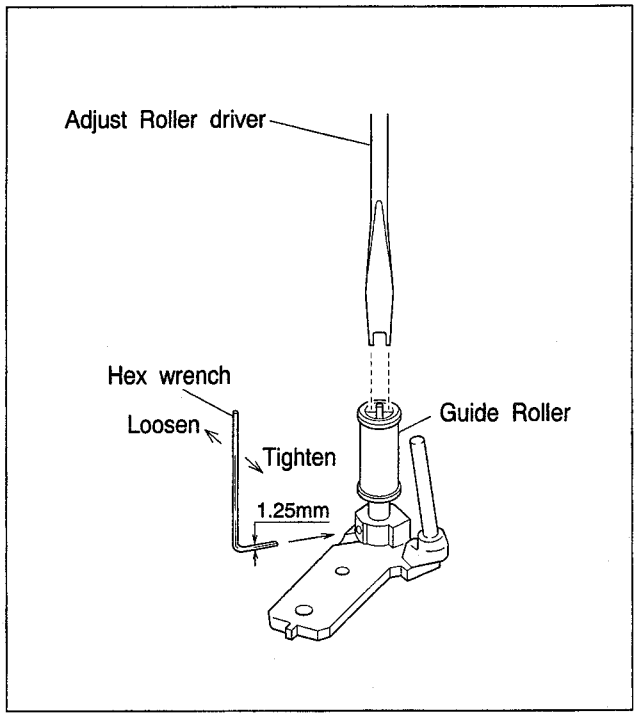


Fig. 2-7-2

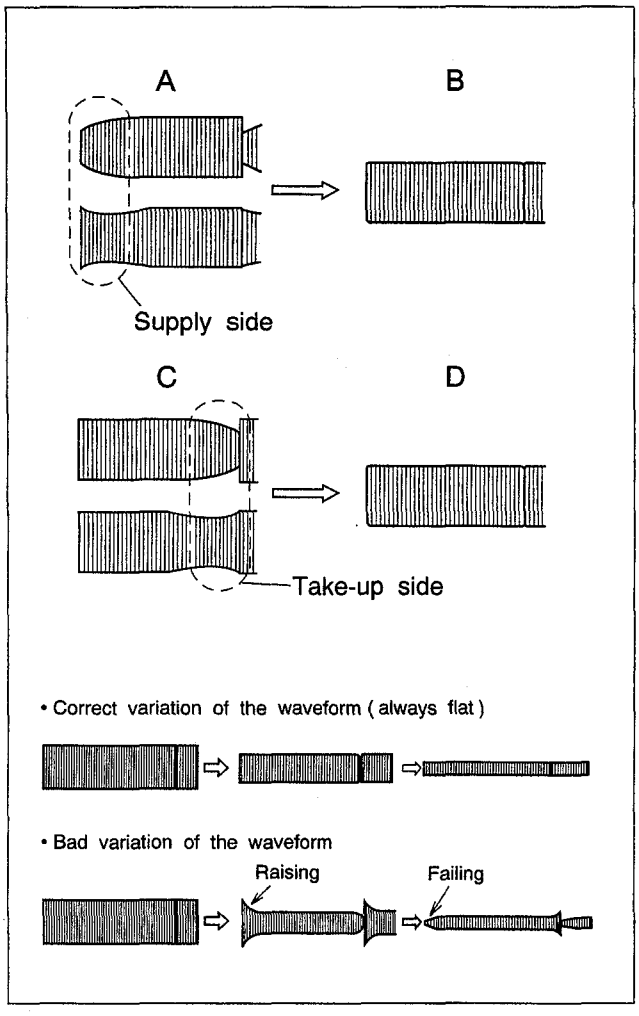


Fig. 2-7-3

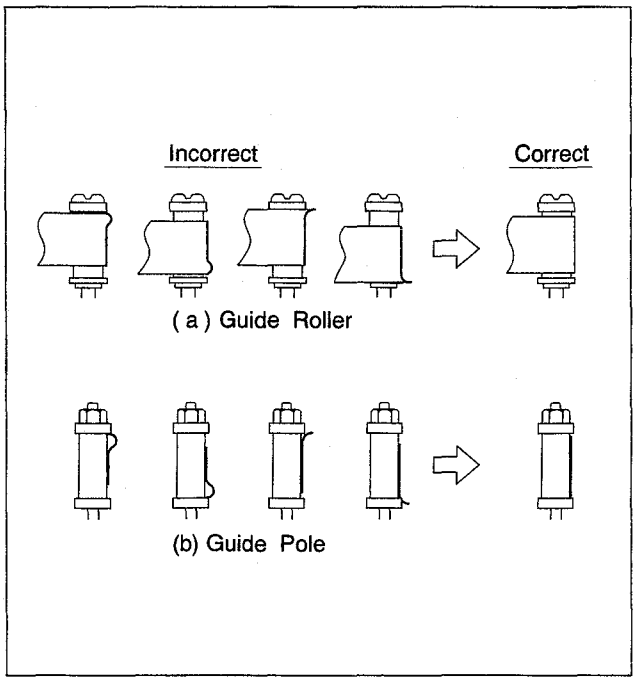


Fig. 2-7-4

2.7.2 A/C head height & azimuth

NOTES: • *Temporarily set A/C head height as indicated in Fig. 2-5-4.*
• *Use spare tape to check the transport and confirm the tape is not scratched or damaged.*

1. Tilt

(1) Use spare tape and set for playback.
(2) Turn screw (3) clockwise to where the tape curls just slightly at the TU guide pole bottom flange as shown in Fig.2-7-5.
(3) Then slowly turn screw (3) counterclockwise to where the curling ceases.

2. Height

(1) Connect CH-1 of a dual trace oscilloscope to Audio Out.
(2) Connect CH-2 to TP401(CTL PULSE) of the Main board assy and use the ALT mode.
(3) Playback the SP stairstep portion of the alignment tape

(4) Adjust screws (1), (2) and (3) for maximum audio output and control pulse level.

3. Azimuth

(1) Connect the oscilloscope to Audio Out.
(2) Playback the SP stairstep portion of the alignment tape

(3) Adjust screw (2) so that the audio output is both maximum and with minimum fluctuation.

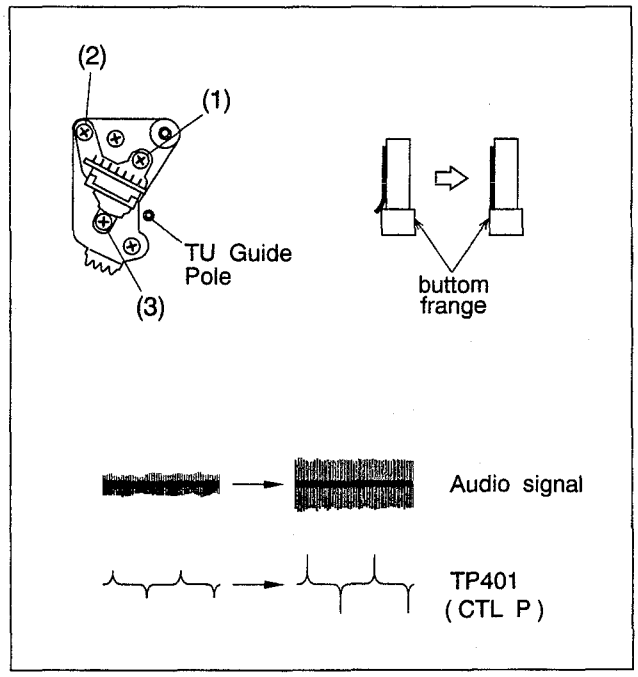


Fig. 2-7-5

2.7.3 A/C head phase(X-value)

(1) Connect the oscilloscope to TP6(PB FM) on the PRE/REC board. Use TP11(D.FF) on the PRE/REC board as a trigger.
(2) Playback the SP stairstep portion of the alignment tape
(3) Set the neutral manual tracking position by simultaneously pressing the CH "–" and "+" buttons.
(4) If adjustment is required, slightly loosen screws (4) and (5). Set A/C head positioning tool on the A/C head adjusting boss as indicated in Fig.2-7-6.
(5) Turn the tool first to position the A/C head fully toward the capstan. Then gradually return it toward the drum and stop at the position of maximum FM waveform output level as shown in Fig.2-7-7.
(6) Tighten screw (5). Remove the tool and tighten screw (4).

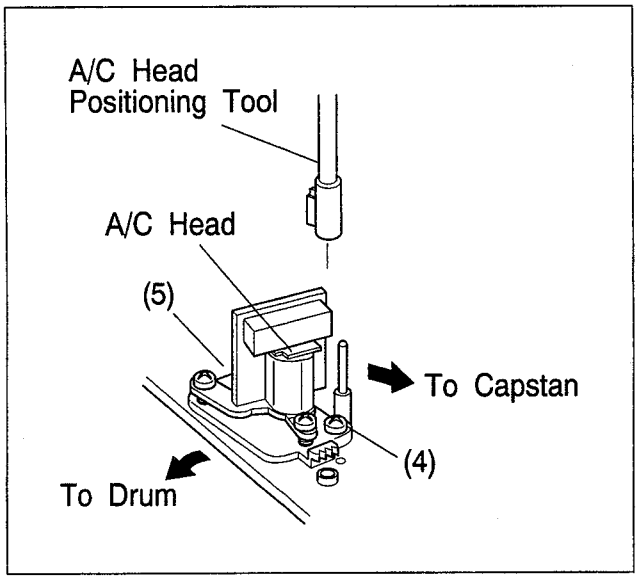


Fig. 2-7-6

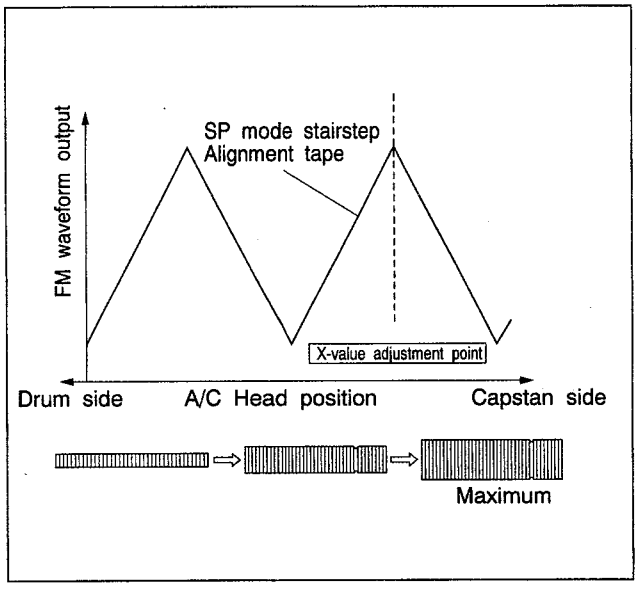


Fig. 2-7-7

2.7.4 Tension pole position

(1) Set for playback mode using MECHANISM SERVICE MODE (See SECTION 1 DISASSEMBLY).
(2) Slightly loosen the screw (A).
(3) Turn the adjust pin so that the tension arm assy does not touch ϕ2.5 pole on the outside.
(4) Tighten the screw (A).
(5) After adjustment, use the back tension cassette gauge and set for the playback mode.
(6) Confirm reading of 29 to 46 g•cm.

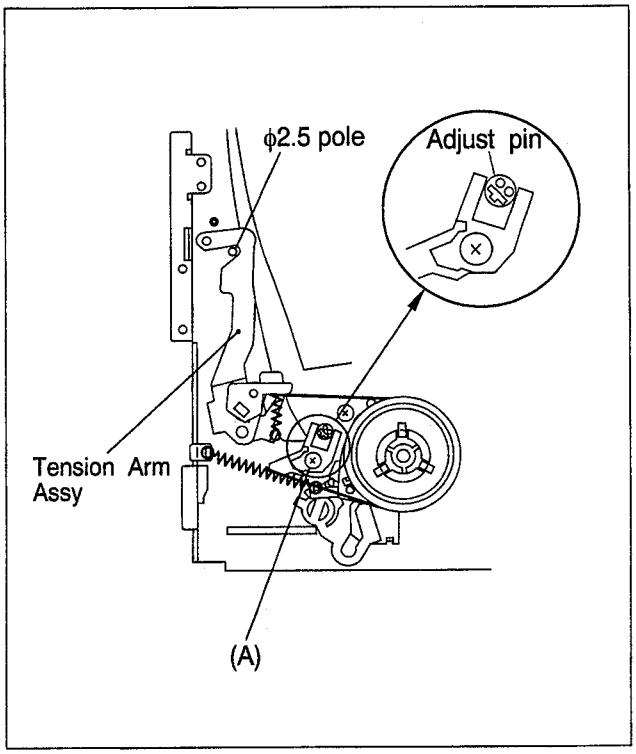


Fig. 2-7-8

2.7.5 Take-up torque

(1) Use the back tension cassette gauge and set for the playback mode.
(2) Confirm reading of 60 to 100 g•cm.

SECTION 3
ELECTRICAL ADJUSTMENT

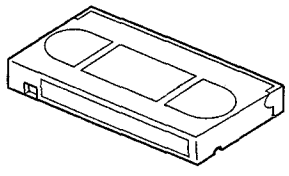
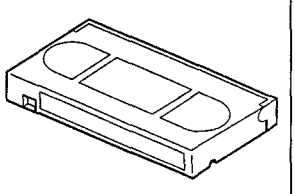
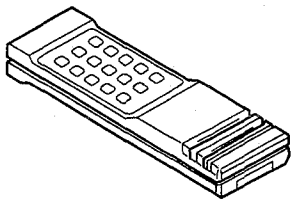
3.1 PRECAUTION

Electrical adjustment are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also do not attempt these adjustments unless the proper equipments is available.

3.1.1 Required test equipment

① Color television or monitor
② Oscilloscope: wide-band,dual-trace,triggered delayed sweep
③ Frequency counter
④ Digital voltmeter
⑤ Signal generator: RF/IF sweep/maker
⑥ Signal generator: PAL color bar, stairstep
⑦ Recording tape
⑧ Digit-key remote controller(provided)

3.1.2 Required adjustment tools

Alignment tape (SP,stairstep) 4822 397 30262	Alignment tape (SP,color bar) 4822 397 30261
	
Presetting unit 4822 395 90915	
	

3.1.3 Color bar signal,color bar pattern

● Color bar signal

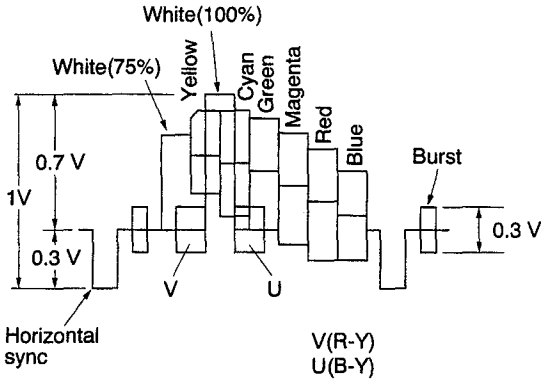


Fig.3-1-1 Color bar signal waveform

● Color bar pattern

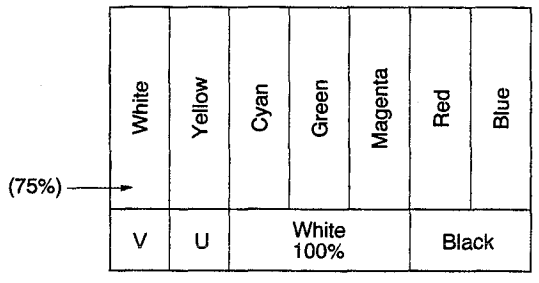


Fig.3-1-2 Color bar pattern

3.2 SERVO CIRCUIT

Notes: • *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
• *Depress button "A", on presetting unit, to set VCR to "code receive" mode.*
• *Use only buttons "E" and "F", depressing other buttons during adjustment may cause adjustment errors.*

3.2.1 PB switching point

Signal	• Alignment tape ,Stairstep
Mode	• PB,Automatic tracking OFF
Equipment	• Oscilloscope
Measurement point	• TP210 (VIDEO OUT)
Trigger slope (-)	• TP11(DRUM FF) , [PRE/REC BOARD]
Adjustment tool	• Presetting unit
Specification	• 6.5 ± 0.5H

(1) Connect an oscilloscope to TP210 and external trigger from TP11 (negative slope).
(2) Playback the stairstep signal of the alignment tape.
(3) Set the tracking control to the center position by simultaneously pressing the CH "+" and "−" buttons.
(4) Adjust by pressing "E" or "F" buttons of presetting unit to position the trigger point 6.5 ± 0.5 H from V.sync.
(5) Depress the STOP button.

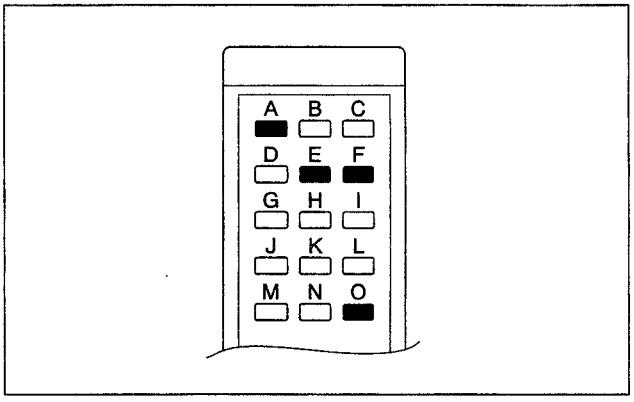


Fig.3-2-1 Presetting unit

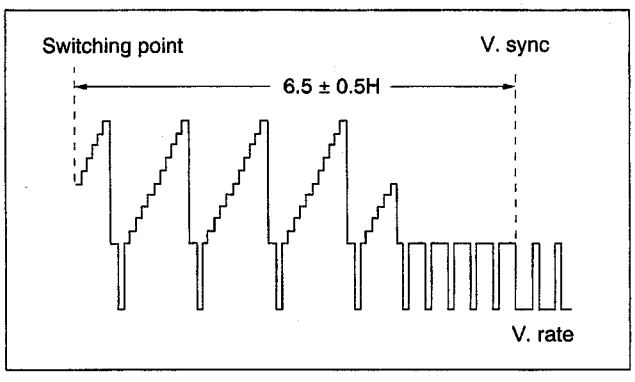


Fig.3-2-2 PB switching point

Alternate method
(1) Playback the stairstep signal of the alignment tape.
(2) Press the "O" button of the presetting unit.
(3) Confirm that VCR mode becomes STOP mode.

3.2.2 Slow tracking preset

Signal	• Color bar (PAL, NTSC)
Mode	• SP, REC → PB(SLOW) Automatic tracking OFF
Equipment	• TV-Monitor
Adjustment tool	• Presetting unit
Specification	• Minimum noise

Notes : • *Depress button "A", on presetting unit, to set VCR to "code receive" mode.*
• *Use only buttons "B" and "C", depressing other buttons during adjustment may cause adjustment errors.*

(1) Record a PAL color bar signal in the SP mode.
(2) Playback recorded signal on the FWD slow mode.
(3) Set the tracking control to the center position by simultaneously pressing the CH "+" and "−" buttons.
(4) Observe the display on the TV monitor and adjust for optimum noise condition (best tracking) by depressing "B " or "C " buttons of the presetting unit.
(5) Depress the STOP button.
(6) Confirm that the bar noise is not visible on the TV monitor in the slow mode.
(7) Repeat steps (1) to (6) in NTSC mode.

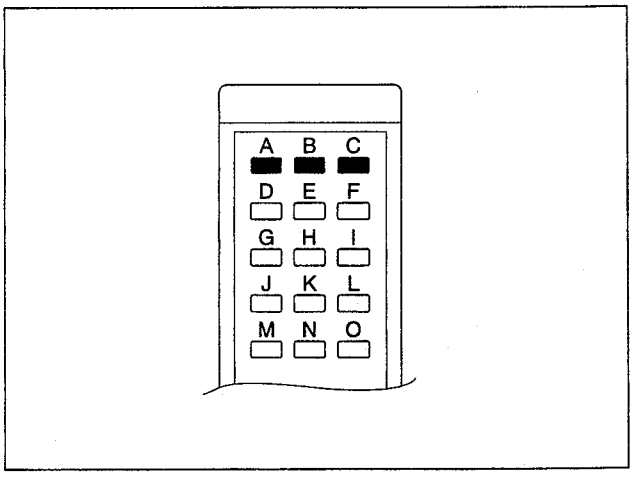


Fig.3-2-3 Presetting unit

3.3 VIDEO CIRCUIT

Notes: • *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
• *VIDEO circuit adjustments are performed by the EVR system by use of the presetting unit and digit-key remote controller.*
• *Depress button "A", on presetting unit, to set VCR to "code receive" mode.*

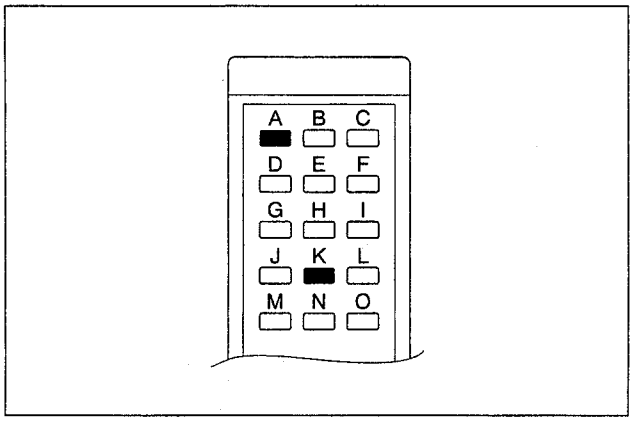


Fig.3-3-1 Presetting unit

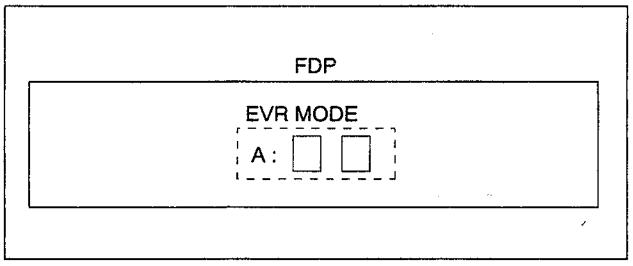


Fig.3-3-2 EVR mode

3.3.1 EE Y LEVEL

Signal	• Color bar
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• TP210 (VIDEO OUT)
Adjustment tool	• Presetting unit Digit-key remote controller
EVR mode	• A : 11
Specification	• 0.98 ± 0.04Vp-p (terminated)

(1) Connect an oscilloscope to TP210.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 3 seconds.
(3) Set "A : 11" pressing 1 digit key twice of the remote controller.
(4) Adjust CH "–" or "+" button for 0.98 ± 0.04Vp-p.
(5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

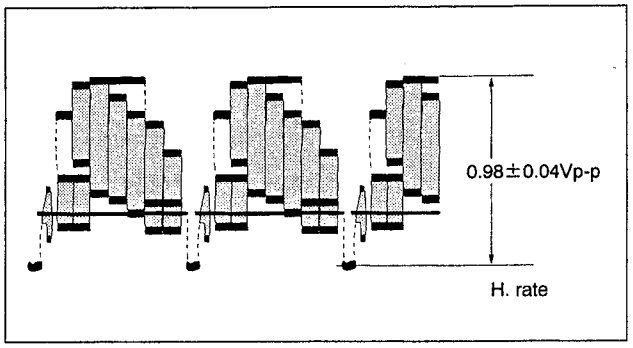


Fig. 3-3-3 EE Y level

3.3.2 WHITE/DARK CLIP

Signal	• Color bar
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• IC201 pin 13
Adjustment tool	• Presetting unit Digit-key remote controller
EVR mode	• A : 14
Specification	• WHITE CLIP : 90 ± 4% DARK CLIP : 45 ± 8%

(1) Connect an oscilloscope to IC201 pin 13.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 3 seconds.
(3) Set "A : 14" pressing 1 and 4 digit keys of the remote controller.
(4) Adjust CH "–" or "+" button for 90 ± 4% white clip and 45 ± 8% dark clip as shown in Fig.3-3-4.
(5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

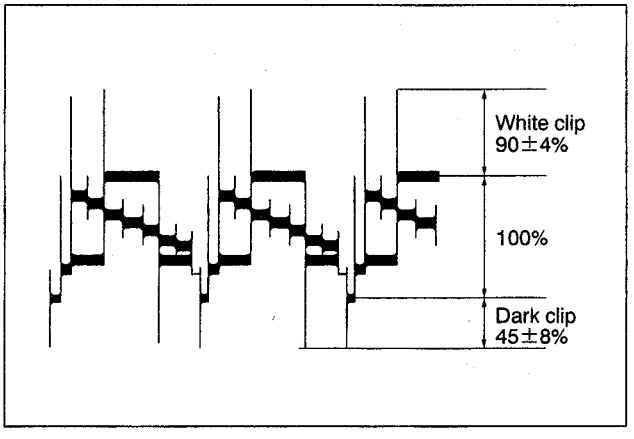


Fig.3-3-4 Whate/dark clip

3.3.3 PB Y LEVEL

Signal	• Alignment tape Color bar
Mode	• PB
Equipment	• Oscilloscope
Measurement point	• TP210 (VIDEO OUT)
Adjustment tool	• Presetting unit Digit-key remote controller
EVR mode	• A : 11
Specification	• 0.98 ± 0.04Vp-p (terminated)

(1) Connect an oscilloscope to TP210.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 3 seconds.
(3) Set "A : 11" pressing 1 digit key twice of the remote controller.
(4) Adjust CH "–" or "+" button for 0.98 ± 0.04Vp-p as shown in Fig.3-3-5.
(5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

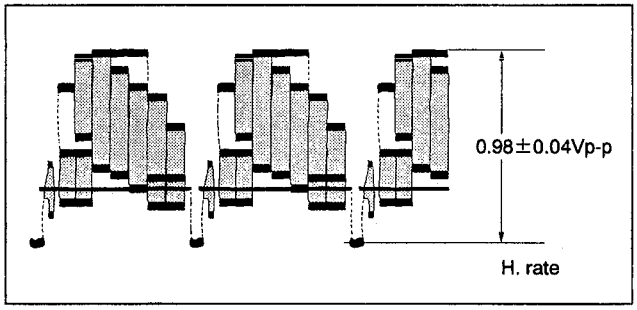


Fig.3-3-5 PB Y level

3.3.4 CARRIER

Signal	• No signal-VIDEO INPUT
Mode	• EE
Equipment	• Frequency counter
Measurement point	• IC201 pin 19
Adjustment tool	• Presetting unit Digit-key remote controller
EVR mode	• A : 12
Specification	• 3.80MHz $^{+0.02}_{-0.06}$ MHz

(1) Connect an oscilloscope to IC201 pin 19.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 3 seconds.
(3) Set "A : 12" pressing 1 and 2 digit keys of the remote controller.
(4) Adjust CH "–" or "+" button for 3.80MHz $^{+0.02}_{-0.06}$ MHz.
(5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

3.3.5 DEVIATION

Signal	• Color bar
Mode	• REC then PB
Equipment	• Oscilloscope
Measurement point	• TP210 (VIDEO OUT)
Adjustment tool	• Presetting unit Digit-key remote controller
EVR mode	• A : 13
Specification	• 0.98 ± 0.04Vp-p (terminated)

(1) Connect an oscilloscope to TP210.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 3 seconds.
(3) Set "A : 13" pressing 1 and 3 digit keys of the remote controller.
(4) Record and playback a color bar signal.
(5) Before recording, Adjust CH "–" or "+" button so that Y level becomes 0.98 ± 0.04Vp-p during play back as shown in Fig.3-3-6.
(6) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

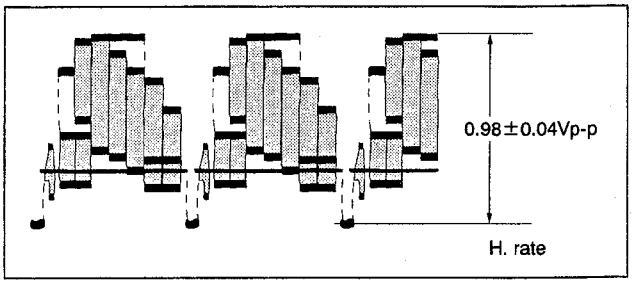


Fig.3-3-6 Deviation

3.3.6 REC COLOR LEVEL

Signal	• Color bar
Mode	• REC
Equipment	• Oscilloscope
Measurement point	• IC201 pin 33
Adjustment tool	• Presetting unit Digit-key remote controller
EVR mode	• A : 2
Specification	• 250 ± 15mVp-p

(1) Connect an oscilloscope to IC201 pin 33.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 3 seconds.
(3) Set "A : 2" pressing 2 digit key of the remote controller.
(4) Adjiust CH "–" or "+" button for 250 ± 15mVp-p.
(5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

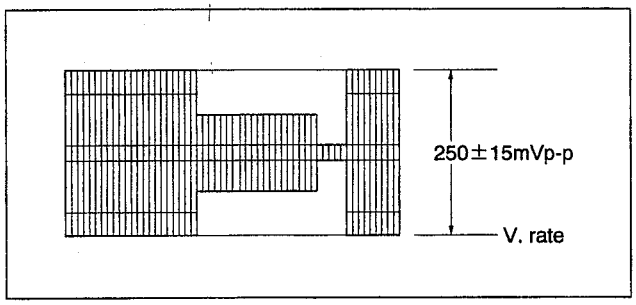


Fig.3-3-7 REC color level

3.4 SYSCON CIRCUIT

Notes: • *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
• *When performing this adjustment,remove the MECHANISM assy.*

3.4.1 Timer clock

Signal	• No signal
Mode	• EE
Equipment	• Frequency counter
Measurement point	• IC601 pin 64
Adjustment part	• C601 (TIMER CLOCK)
Specification	• 1024.008 ± 0.001 Hz [976.5549 ± 0.0010 usec]

(1) Connect the frequency counter to IC601 pin 64 and GND.
(2) Connect the short wire between IC601 pin 33 and IC601 pin 63.
(3) Short the leads of capacitor C604 once in order to reset IC601.
(4) Disconnect the short wire then connect it again quickly.
(5) Adjust C601 for 1024.008 ± 0.001 Hz.
(976.5549 ± 0.0010 usec)

3.5 TUNER CIRCUIT

Note: *Unless otherwise specified, all measurement points and adjustment parts are located on the IF UNIT.*

3.5.1 RF AGC

Signal	• TV broadcasting
Mode	• Tuner
Equipment	• TV monitor
Measurement point	• IF UNIT
Adjustment part	• IF VR
Specification	• Minimum noise

Note: *Adjust IF VR (RF AGC) to correct for excess noise in the picture or when streaks cross interference occurs due to strong electrical fields.*

(1) Adjust IF VR to minimize noise or streaks on the TV screen.
(2) Adjust for noisy picture with strong signal. Then adjust until noise just disappears. Select other channels to confirm proper pick-up of channels.

SECTION 4
CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES

Safety precautions

The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

1. Schematic diagram values

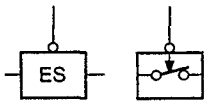
Unless otherwise specified.

1) All resistance values are in ohms. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values in μH, (m: mH).
4) All diodes are 1SS133 or MA165, (refer to parts list).

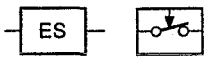
2. Indications

AUX : Active only at high.

$\overline{AUX}$: Active only at low.



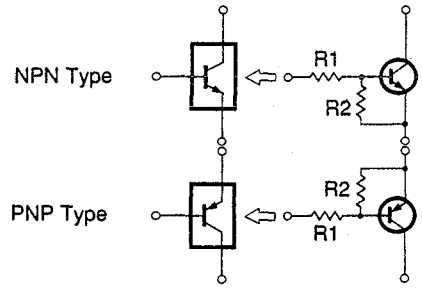
Active only at low for electronic switch.



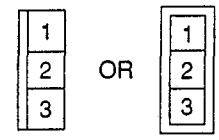
Active only at high for electronic switch.

Digital transistor :

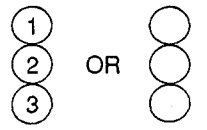
The digital transistor includes built in resistors.
It features small size and high reliability.



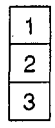
3. Interpreting Connector indications



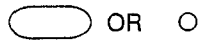
Removable connector



Direct connection on board



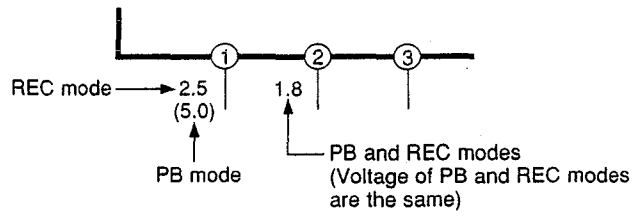
Non-removable Board connector



Connected pattern on board

4. Voltage measurement

1) Video circuits
   REC: Colour bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, colour bar SP mode, normal VHS mode.
   — : Unmeasurable or unnecessary to measure.
2) Audio circuits
   REC: 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode.
   PB : REC then playback it.
3) Movie Camera circuits
   Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.
4) Indication on schematic diagram
   Voltage Indications for REC and PB modes on the schematic diagram are as shown below.



Note: If do not indicate for voltage measurement on the schematic diagram, refer to the voltage charts.

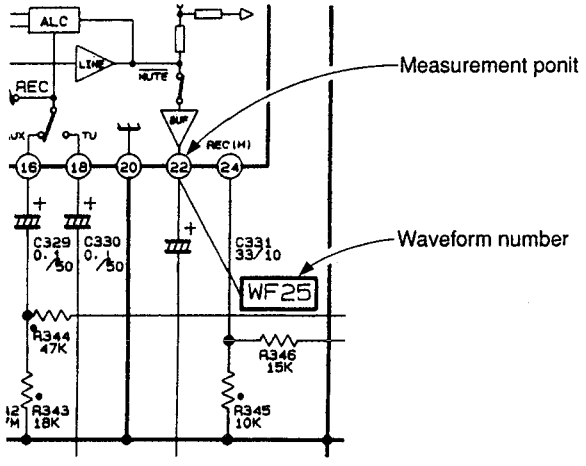
5. Waveform measurement

1) Video circuits
REC: Colour bar signal in SP mode, normal VHS mode.
PB : Alignment tape, colour bar SP mode, normal VHS mode.

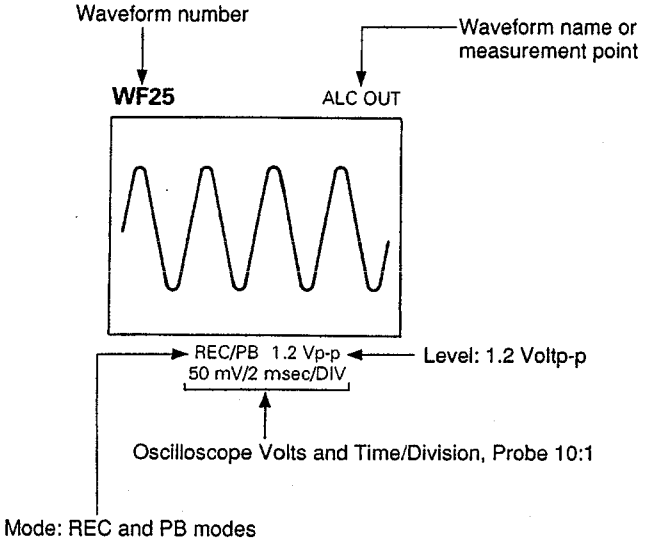
2) Audio circuits
REC: 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode.
PB : REC then playback it.

3) Movie Camera circuits
Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.

4) Indication on schematic diagram
Waveform indications on the schematic diagram are as shown below.



5) Waveform indications



6. Signal path Symbols

The arrows indicate the signal path as follows.

- Playback signal path
- Playback and recording signal path
- Recording signal path (including E-E signal path)
- Y signal path
- Colour (Chroma) signal path
- R or R-Y signal path
- B or B-Y signal path
- Capstan servo path
- Drum servo path
- Reel servo path

CIRCUIT BOARD NOTES

1. Colour indications

1) Foil side :
Foil side patterns are indicated at GREY shading.
2) Component side :
Component side patterns are indicated at RED shading.

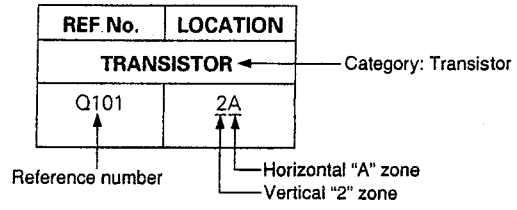
2. Foil and Component sides

1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
Parts on the component side seen from component face (parts face) are indicated.

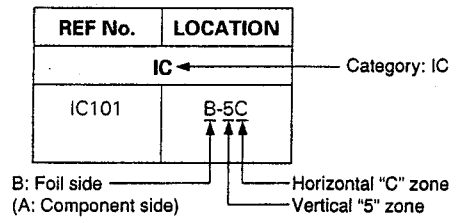
3. Parts location guides

Parts location are indicated by guide scale on the circuit board.

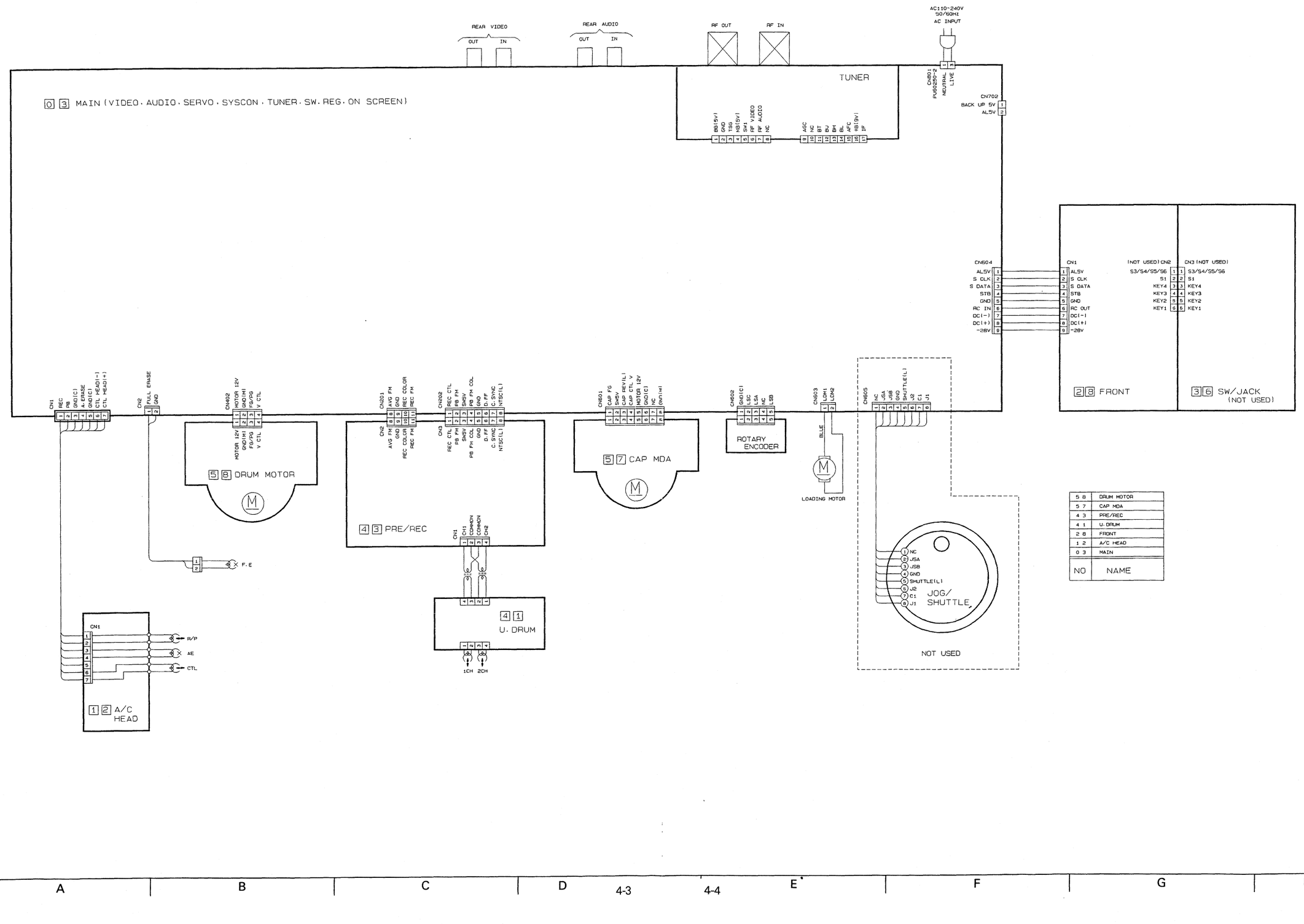
1) Signal pattern :



2) Double pattern :

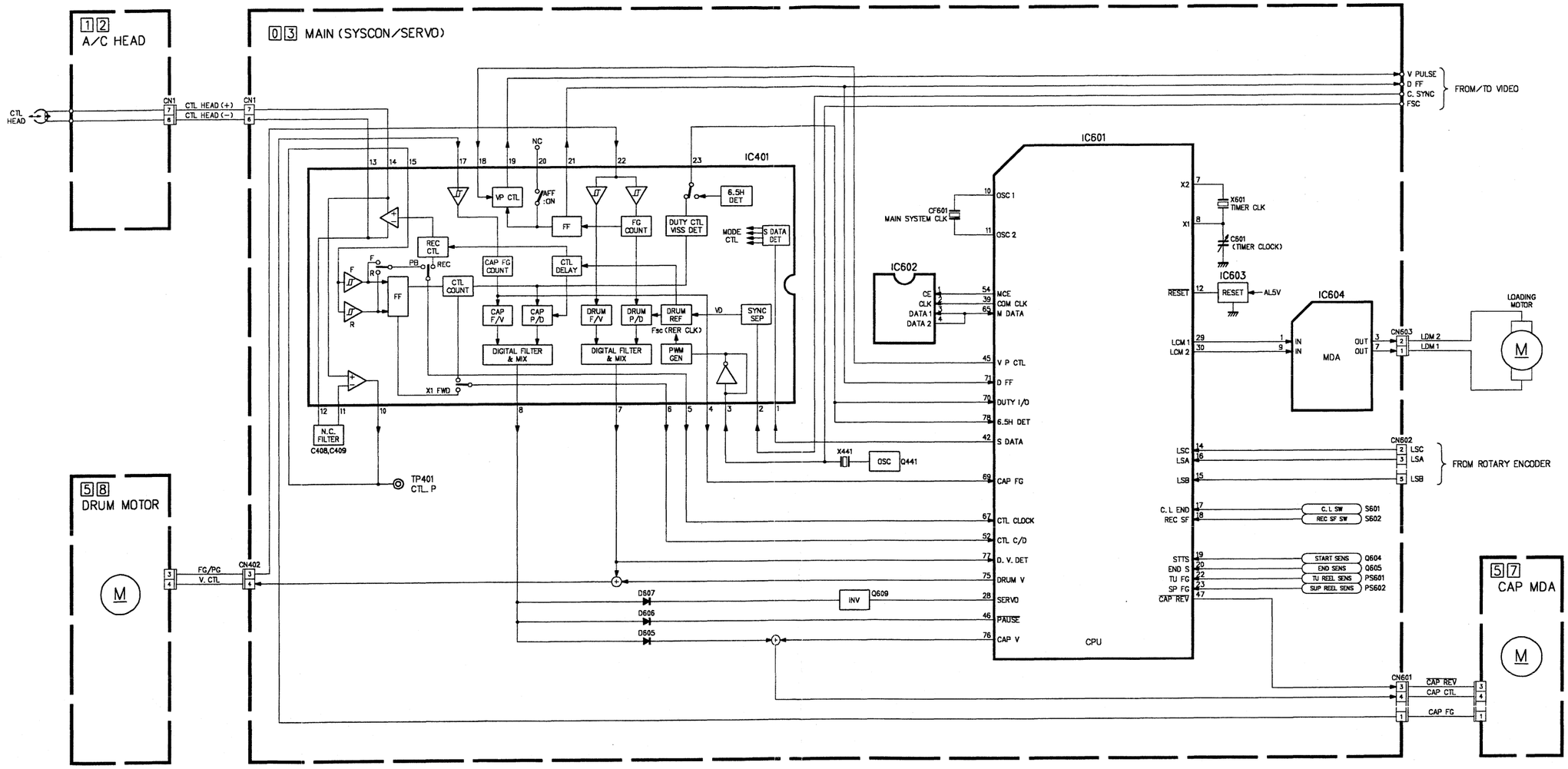


4.1 BOARD INTERCONNECTIONS



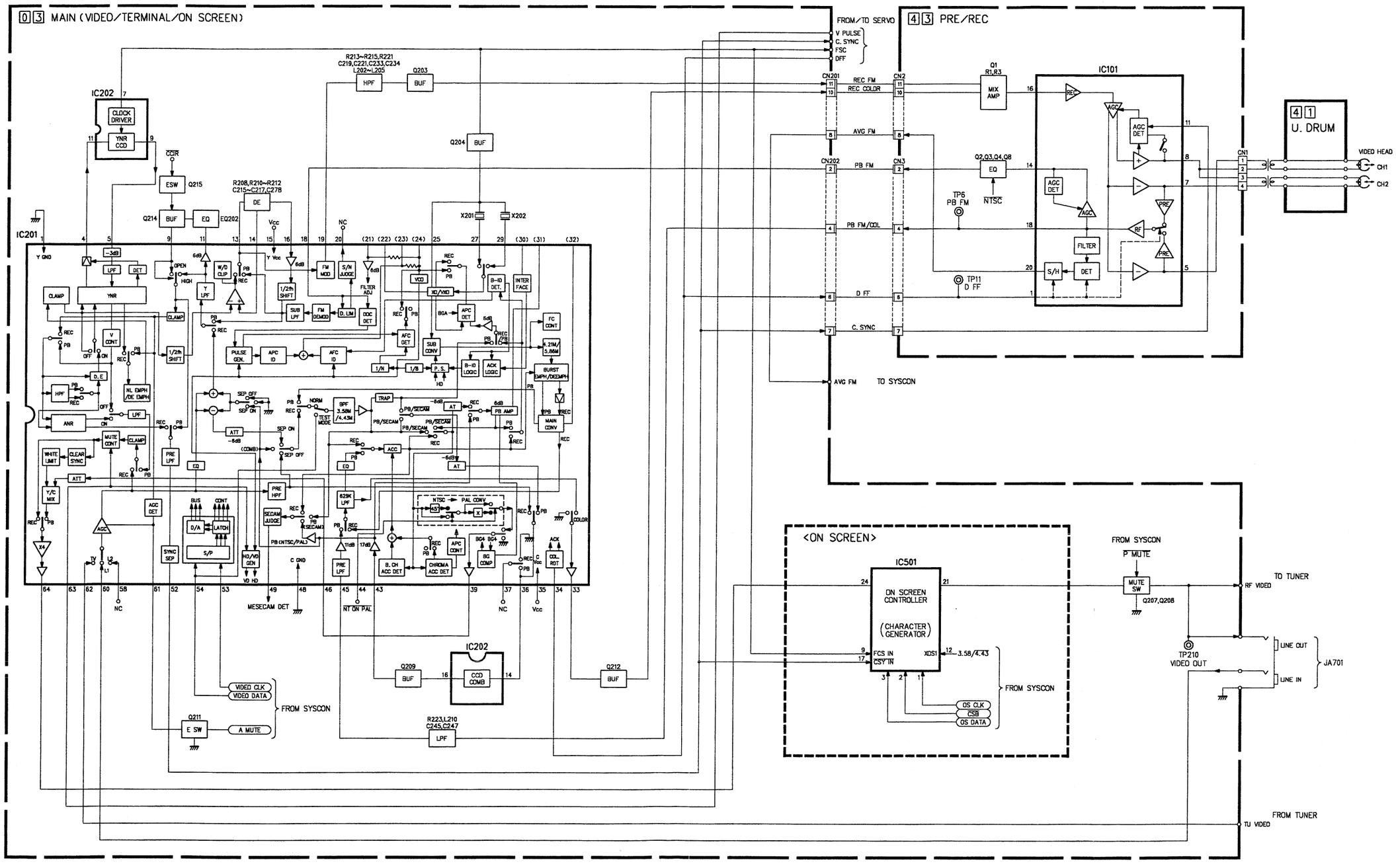
5 8	DRUM MOTOR
5 7	CAP MDA
4 3	PRE/REC
4 1	U. DRUM
2 8	FRONT
1 2	A/C HEAD
0 3	MAIN
NO	NAME

4.2 SYSCON/SERVO BLOCK DIAGRAM

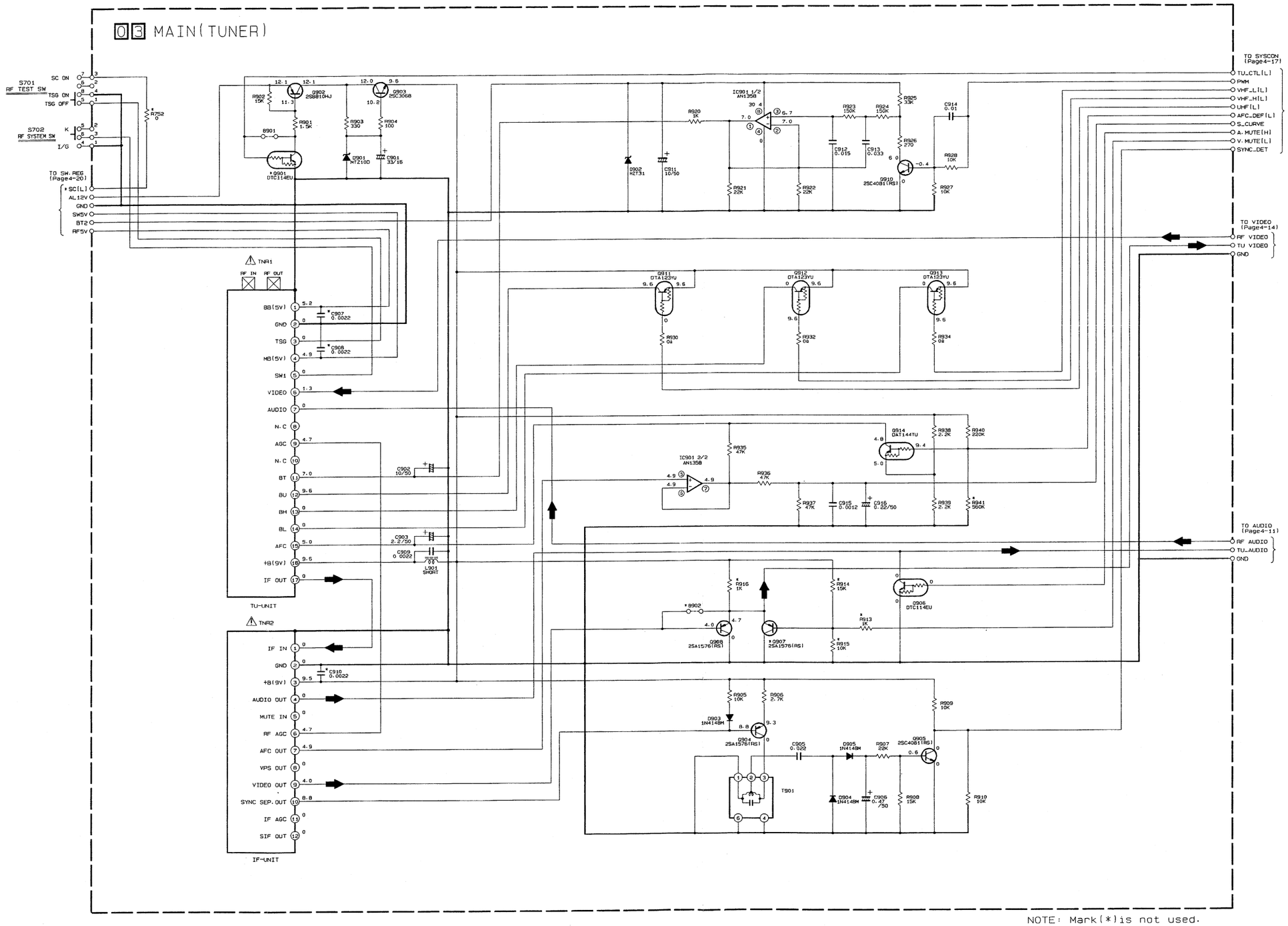


/IDE-V20866 / DRUCK2

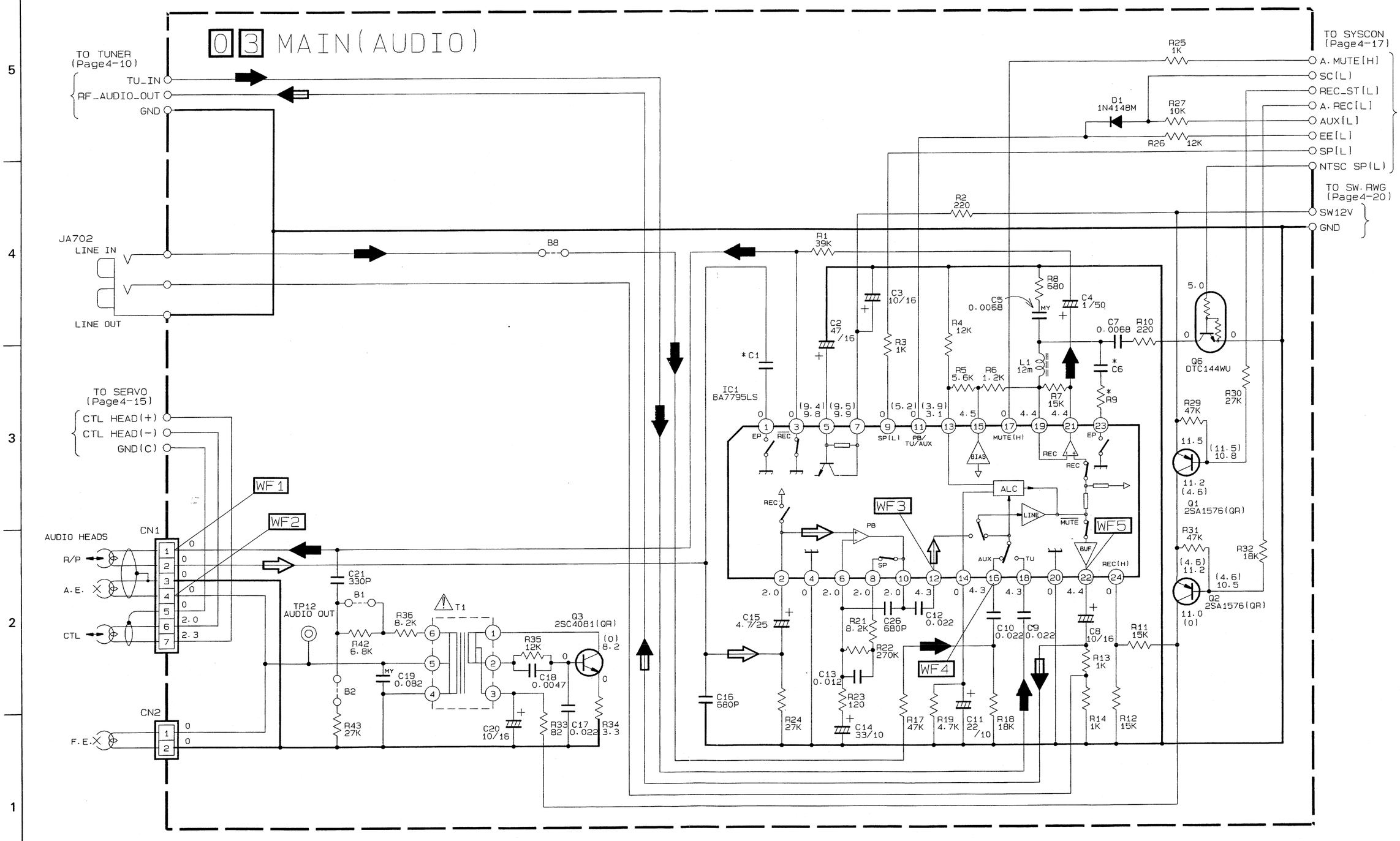
4.3 VIDEO BLOCK DIAGRAM



4.4 TUNER SCHEMATIC DIAGRAM

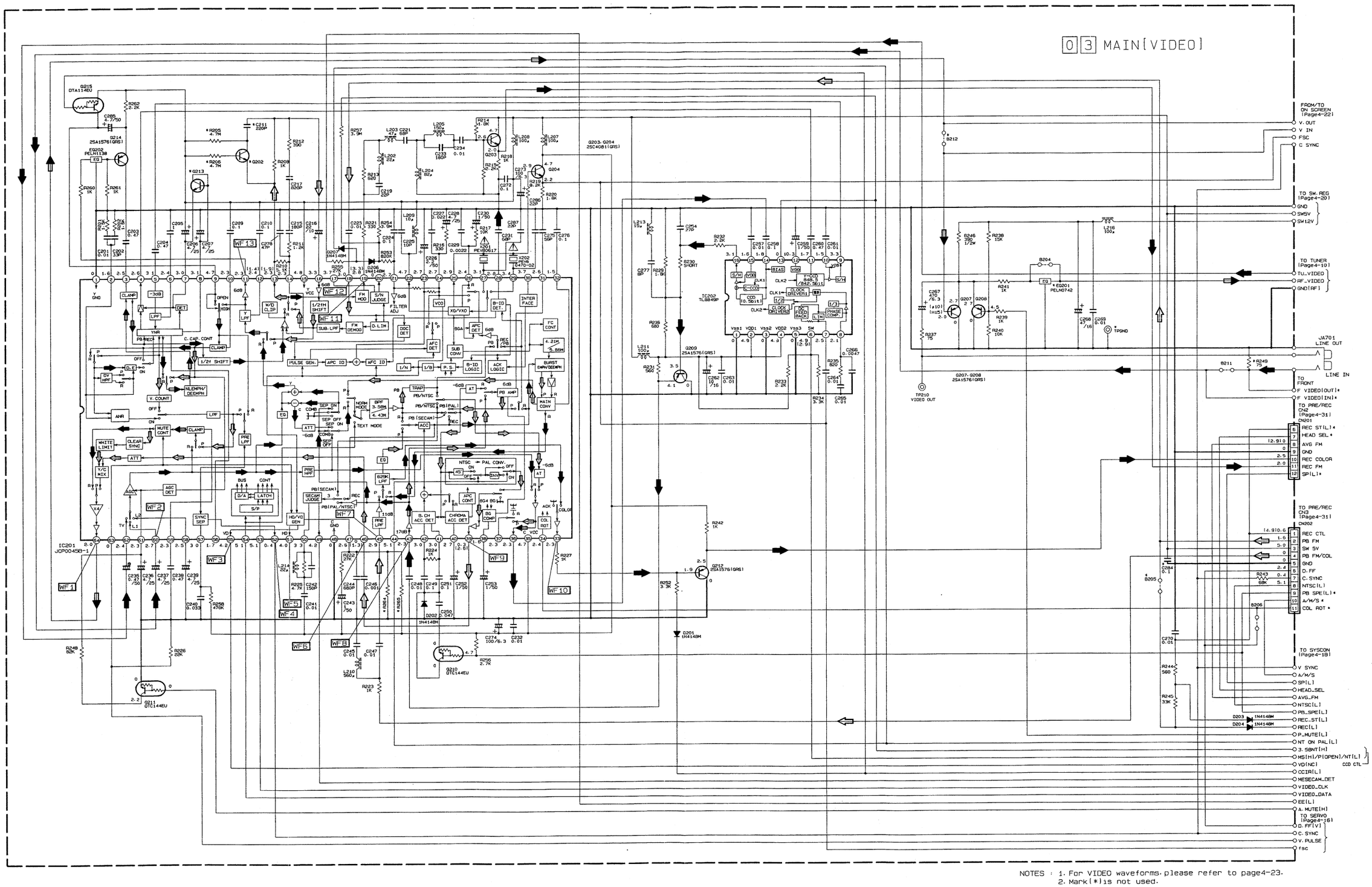


4.5 AUDIO SCHEMATIC DIAGRAM



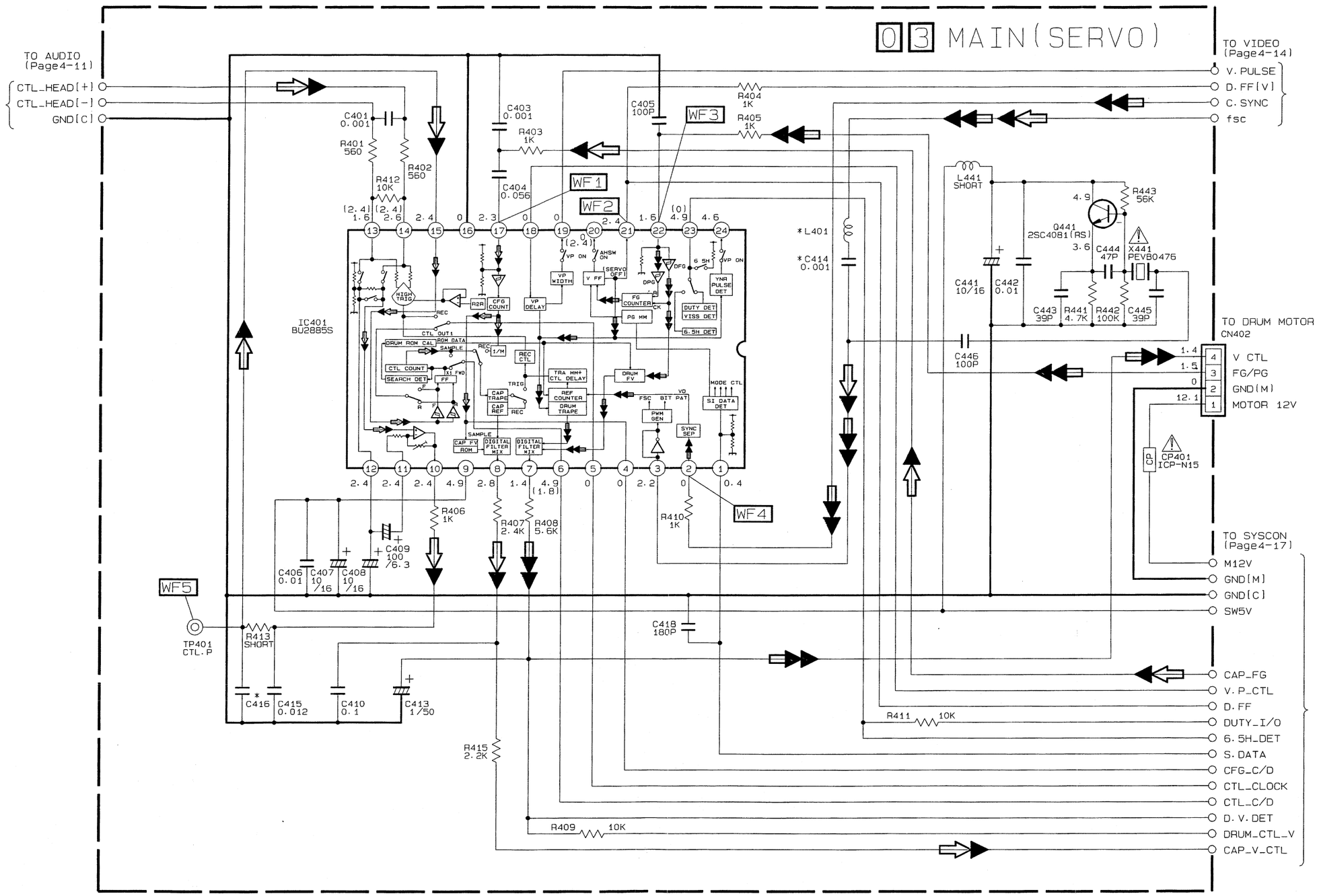
NOTES : 1. For AUDIO waveforms, please refer to page4-23.
2. Mark(*)is not used.

4.6 VIDEO SCHEMATIC DIAGRAM



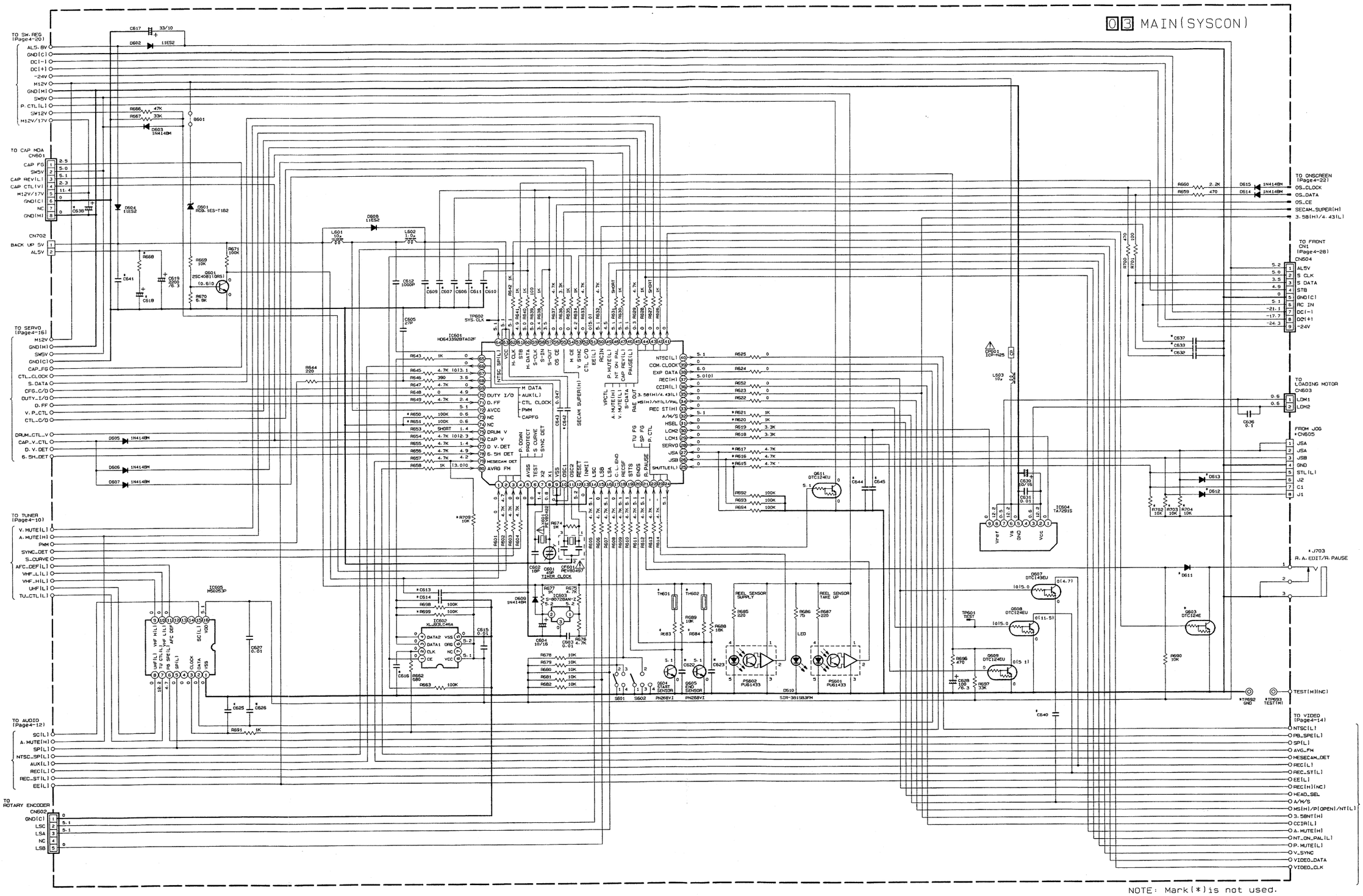
NOTES : 1. For VIDEO waveforms, please refer to page4-23.
2. Mark(*)is not used.

4.7 SERVO SCHEMATIC DIAGRAM



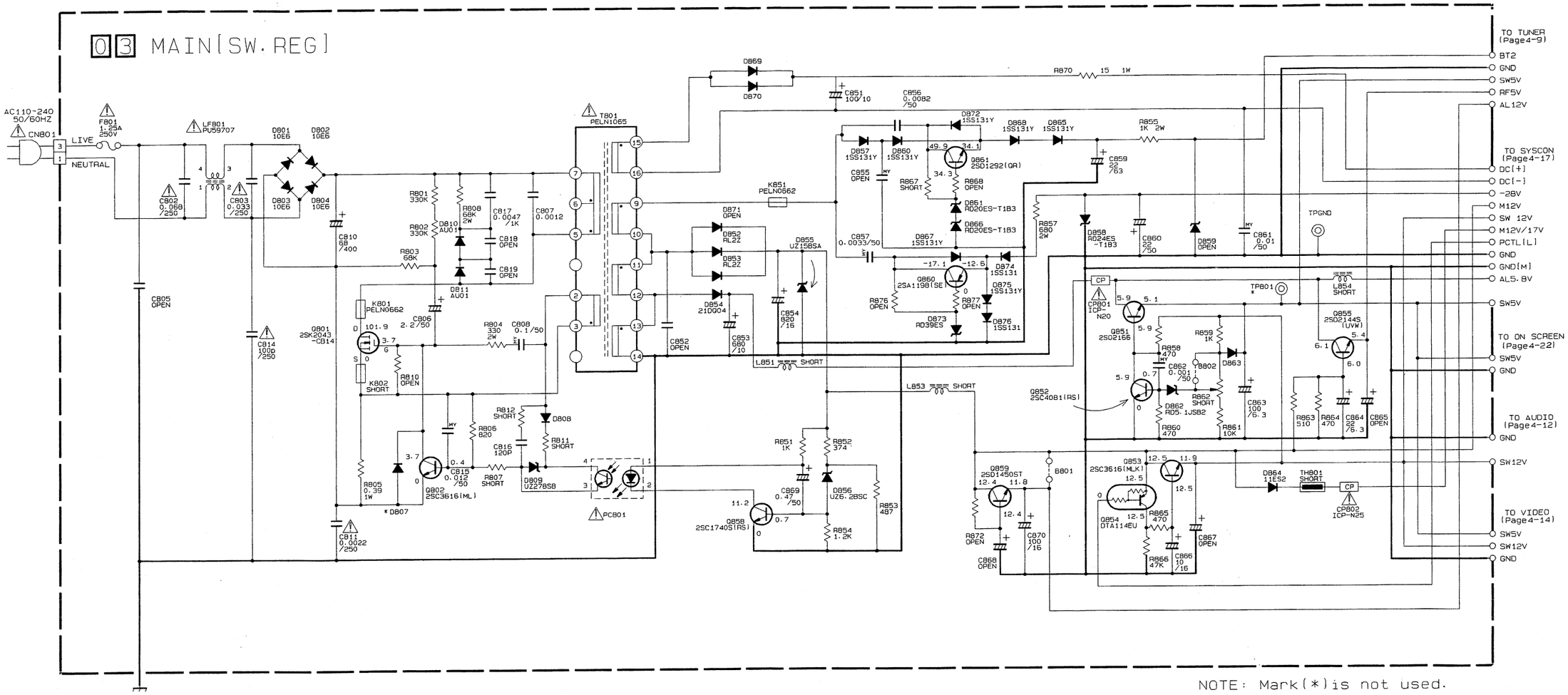
NOTES : 1. For SERVO waveforms. please refer to page4-23.
2. Mark(*)is not used.

4.8 SYSTEM CONTROL SCHEMATIC DIAGRAM



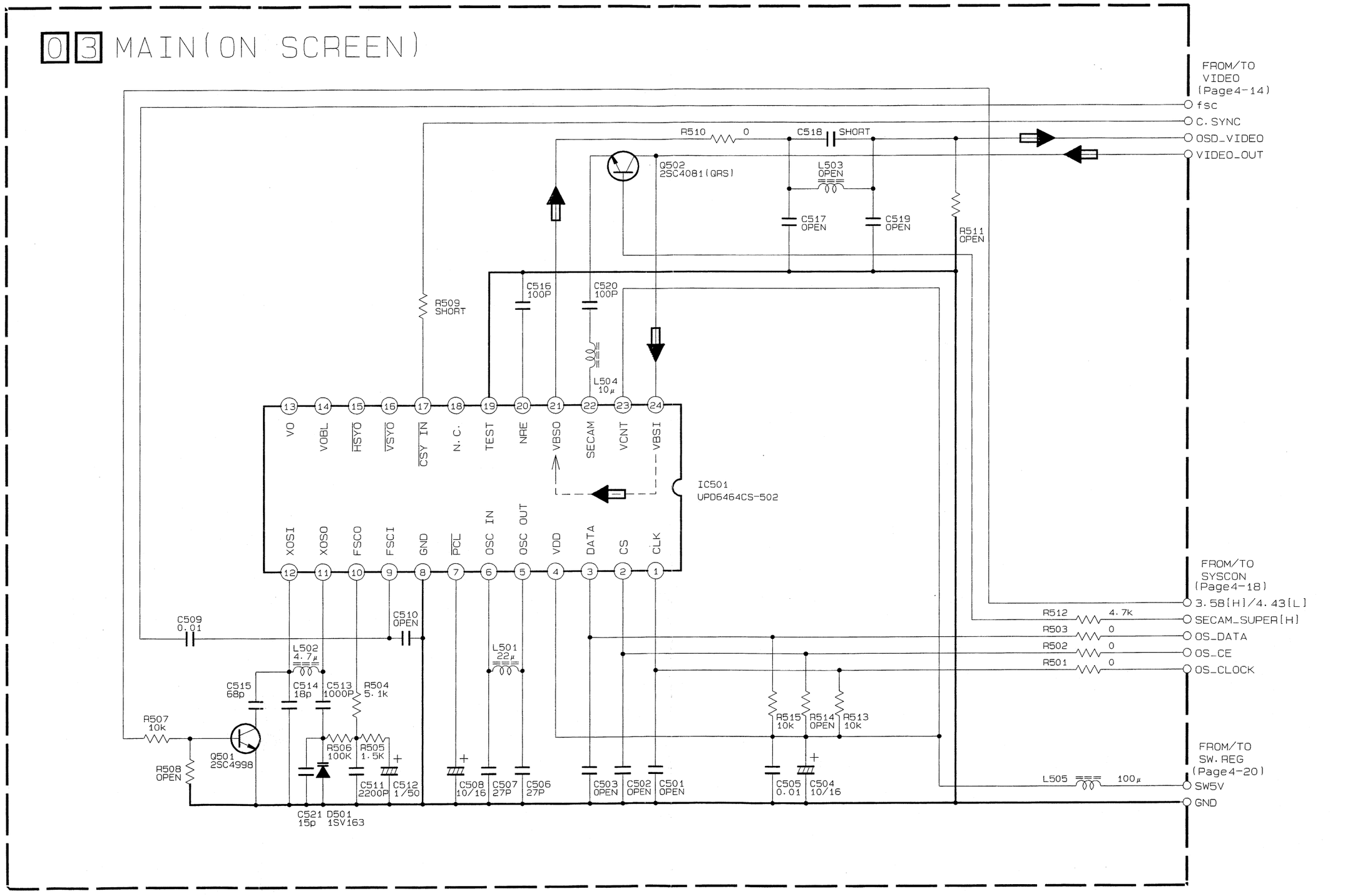
VIDE-V20866 / DRUCK8

4.9 SWITCHING REGULATOR SCHEMATIC DIAGRAM



NOTE: Mark(*)is not used.

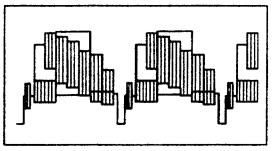
4.10 ON SCREEN SCHEMATIC DIAGRAM



WAVEFORMS

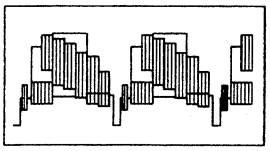
—VIDEO—

WF1 IC201-64



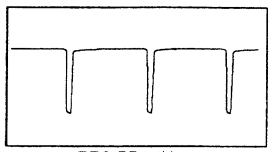
REC/PB2.0Vp-p
50mV/20μsec/DIV

WF2 IC201-60



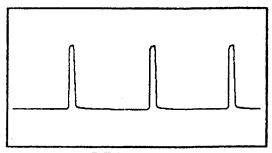
REC1.0Vp-p
20mV/20μsec/DIV

WF3 IC201-55



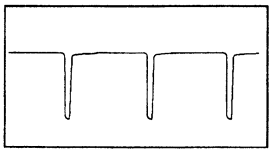
REC/PB4.4Vp-p
0.2V/5msec/DIV

WF4 IC201-52



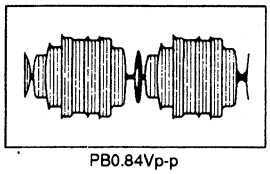
REC4.0Vp-p
0.1V/20μsec/DIV

WF5 IC201-51



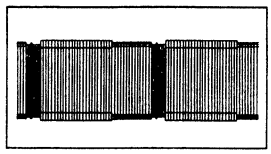
REC4.2Vp-p
0.1V/20μsec/DIV

WF6 IC201-46



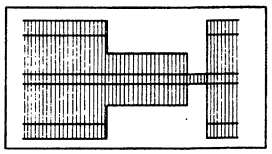
PB0.84Vp-p
20mV/20μsec/DIV

WF7 IC201-45



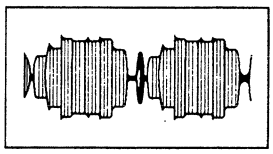
PB0.3Vp-p
10mV/5msec/DIV

WF8 IC201-43



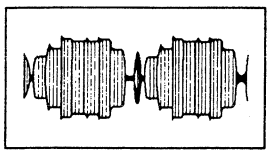
REC0.08Vp-p/PB0.15Vp-p
5mV/5msec/DIV

WF9 IC201-39



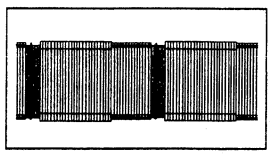
PB0.8Vp-p
20mV/20μsec/DIV

WF10 IC201-33



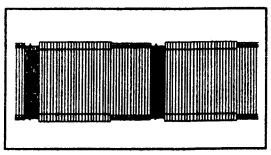
REC0.26Vp-p
10mV/20μsec/DIV

WF11 IC201-19



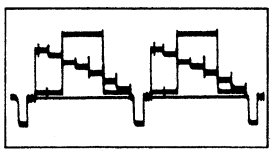
REC1.4Vp-p
50mV/5msec/DIV

WF12 IC201-18



PB0.42Vp-p
10mV/5msec/DIV

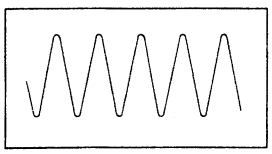
WF13 IC201-11



REC/PB1.0Vp-p
50mV/20μsec/DIV

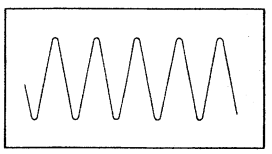
—AUDIO—

WF1 CN1-1



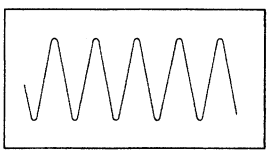
REC44.0Vp-p
2.0V/20μsec/DIV

WF2 CN1-4



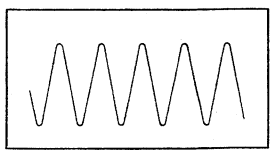
REC36.0Vp-p
2.0V/20μsec/DIV

WF3 IC1-12



PB0.13Vp-p
5mV/1msec/DIV

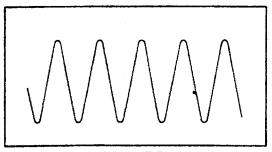
WF4 IC1-16



REC0.22Vp-p
10mV/1msec/DIV

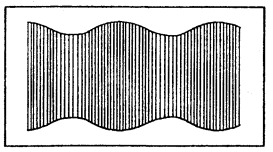
—SERVO—

WF5 IC1-22



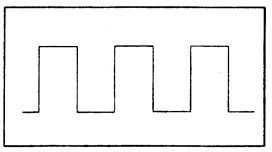
REC2.4Vp-p/PB3.2Vp-p
0.1V/1msec/DIV

WF1 IC401-17



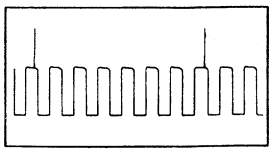
REC2.1Vp-p
50mV/10msec/DIV

WF2 IC401-21 D.FF



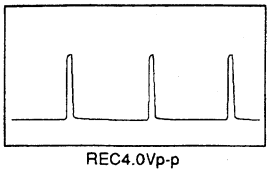
REC/PB5.6Vp-p
0.2V/10msec/DIV

WF3 IC401-22 D.PG/FG



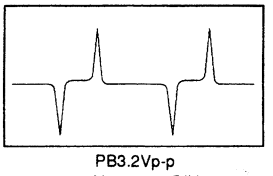
REC/PB5.0Vp-p
0.1V/5msec/DIV

WF4 IC401-2 C.SYNC



REC4.0Vp-p
0.1V/20μsec/DIV

WF5 TP401 CTL PULSE



PB3.2Vp-p
0.1V/10msec/DIV

COMPONENT PARTS LOCATION GUIDE

REF.NO.	LOCATION		
CAPACITOR			
C1	B	C	7O
C2	A	D	8P
C3	A	D	8P
C4	A	D	9O
C5	A	D	9P
C6	A	D	9P
C7	A	D	9P
C8	A	D	9O
C9	B	C	9N
C10	B	C	9N
C11	A	D	9N
C12	B	C	8N
C13	B	C	8N
C14	A	D	9N
C15	A	D	7O
C16	B	C	8N
C17	B	C	6P
C18	B	C	6P
C19	A	D	7O
C20	A	D	7P
C21	B	C	8N
C26	B	C	8N
C201	B	C	17L
C202	B	C	17L
C203	B	C	16L
C204	B	C	16K
C205	B	C	16L
C206	A	D	16L
C207	A	D	16L
C209	B	C	16L
C210	B	C	16L
C211	B	C	14K
C215	B	C	15L
C216	A	D	14L
C217	B	C	14K
C218	B	C	14J
C219	B	C	12L
C220	B	C	12L
C221	B	C	12M
C222	B	C	15L
C223	B	C	12L
C224	B	C	14L
C225	B	C	14K
C226	A	D	14K
C227	B	C	14L
C228	A	D	14K
C229	B	C	13K
C230	A	D	13L
C231	B	C	14L
C232	B	C	13M
C233	B	C	12M
C234	B	C	13M
C235	A	D	17O
C236	A	D	17N
C237	A	D	16O
C238	B	C	16N
C239	A	D	16N
C240	B	C	16N
C241	B	C	16N
C242	B	C	15N
C243	A	D	15N
C244	B	C	15M
C245	B	C	15N
C246	B	C	15M
C247	B	C	15N
C248	B	C	17K
C249	B	C	14N
C250	B	C	15N
C251	B	C	14N
C252	A	D	14N
C253	A	D	14N
C254	B	C	18K
C255	B	C	17K
C256	B	C	18K
C257	B	C	17K
C258	B	C	17K
C259	A	D	15K
C260	B	C	16K
C261	B	C	16K
C262	A	D	18J
C263	B	C	17K
C264	A	D	15J
C265	B	C	15J
C266	B	C	16K
C267	A	D	18P
C268	A	D	19O
C269	B	C	19O
C270	B	C	14O
C272	B	C	15L
C273	A	D	14K
C274	A	D	13L
C275	B	C	13L
C276	B	C	13L
C277	B	C	17J
C278	B	C	16L
C280	B	C	13J
C281	B	C	16K
C283	B	C	16L
C284	B	C	13O
C285	A	D	15L
C286	B	C	13L
C290	B	C	15N
C401	B	C	7L
C403	B	C	7L
C404	B	C	7L
C405	B	C	8L
C406	B	C	7K
C407	A	D	7J
C408	A	D	6J
C409	A	D	6K
C410	B	C	7K
C413	A	D	7K
C414	B	C	8J
C415	B	C	6K
C416	B	C	6K
C417	B	C	7K
C418	B	C	7K
C419	A	D	7L
C441	A	D	7J
C442	B	C	6J
C443	B	C	6J
C444	B	C	6I
C445	B	C	6I
C446	B	C	6I
C447	B	C	6J
C501	B	C	20F
C502	B	C	20F
C503	B	C	20F
C504	A	D	20E
C505	B	C	20F
C506	B	C	20F
C507	B	C	19F
C508	A	D	19E
C509	A	D	19F
C510	B	C	19F
C511	B	C	19E
C512	A	D	19D
C513	B	C	19E
C514	B	C	19E
C515	B	C	18E
C516	B	C	19F
C517	B	C	19F
C518	B	C	20G
C519	B	C	19F
C520	B	C	21F
C521	B	C	19D
C522	A	D	20E
C601	A	D	13G
C602	B	C	13G
C603	B	C	13F
C604	A	D	13G
C605	B	C	11G
C606	B	C	16H
C607	B	C	16H
C609	B	C	14I
C610	B	C	16H
C611	B	C	16I
C612	A	D	13G
C613	B	C	12G
C614	B	C	10K
C615	B	C	9K
C616	B	C	9K
C617	A	D	3C
C618	A	D	19C
C619	A	D	20C
C622	B	C	4G
C623	B	C	18G
C625	B	C	12F
C626	B	C	12F
C627	B	C	11F
C628	A	D	17F
C630	A	D	5K
C631	B	C	5K
C632	B	C	2C
C633	B	C	2C
C636	B	C	6N
C637	B	C	2C
C638	A	D	9L
C640	B	C	12O
C641	B	C	19C
C642	A	D	14G
C643	A	D	14G
C644	B	C	15F
C645	B	C	15E
C646	B	C	10L
C647	B	C	9L
C648	A	D	20C
C802	A	D	4P
C803	A	D	4N
C805	A	D	4P
C806	A	D	3M
C807	A	D	3K
C808	A	D	2K
C810	A	D	2N
C811	A	D	1M
C814	A	D	2N
C815	A	D	2K
C816	A	D	3L
C817	A	D	3K
C818	A	D	3L
C819	A	D	3K
C851	A	D	1H
C852	A	D	2H
C853	A	D	2H
C854	A	D	2G
C855	A	D	3G
C856	B	C	3H
C857	A	D	3G
C859	A	D	3F
C860	A	D	2G
C861	A	D	1I
C862	A	D	1E
C863	A	D	1D
C864	A	D	2F
C865	A	D	2F
C866	A	D	3D
C867	A	D	3E
C868	A	D	3F
C869	A	D	4J
C870	A	D	3E

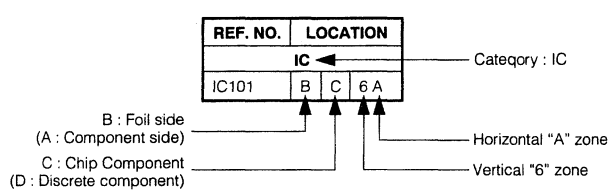
REF.NO.	LOCATION		
C871	A	D	4J
C901	A	D	20J
C902	A	D	21M
C903	A	D	20K
C905	B	C	22M
C906	A	D	22L
C907	B	C	20P
C908	B	C	20O
C909	B	C	20K
C910	B	C	21J
C911	A	D	21O
C912	A	D	21N
C913	A	D	21N
C914	B	C	21M
C915	B	C	22O
C916	A	D	22N
CF601	A	D	14F
CONNECTOR			
CN1	A	D	8N
CN2	A	D	6O
CN201	A	D	15O
CN202	A	D	13O
CN402	A	D	6P
CN601	A	D	10L
CN602	A	D	6D
CN603	A	D	6N
CN604	A	D	2C
CN605	A	D	2D
CN701	A	D	22C
CN702	A	D	19C
CN801	A	D	2O
CIRCUIT PROTECTOR			
CP401	A	D	4J
CP601	A	D	4J
CP801	A	D	2H
CP802	A	D	6L
DIODE			
D1	A	D	10N
D2	A	D	10O
D201	A	D	17K
D202	A	D	15N
D203	A	D	14N
D204	A	D	14N
D205	A	D	16L
D206	A	D	12I
D207	A	D	12I
D208	A	D	11K
D501	B	C	19E
D601	A	D	11F
D602	A	D	3D
D603	A	D	11G
D604	A	D	3D
D605	A	D	11L
D606	A	D	17I
D607	A	D	16F
D608	A	D	12G
D609	A	D	13G
D610	A	D	11G
D611	A	D	16D
D612	A	D	3D
D613	A	D	3D
D614	A	D	19H
D615	A	D	19H
D801	A	D	4M
D802	A	D	4N
D803	A	D	3M
D804	A	D	3N
D807	A	D	2M
D808	A	D	3L
D809	A	D	3M
D810	A	D	4K
D811	A	D	3K
D812	A	D	1K
D852	A	D	3I
D853	A	D	3I
D854	A	D	2I
D855	A	D	3H
D856	A	D	4I
D857	A	D	3H
D858	A	D	1G
D860	A	D	3G
D861	A	D	3G
D862	A	D	2E
D863	A	D	2D
D864	A	D	4F
D865	A	D	4F
D866	A	D	2G
D867	A	D	2G
D868	A	D	4G
D869	A	D	1H
D870	A	D	1H
D871	A	D	3I
D872	A	D	3G
D873	A	D	2F
D874	A	D	2G
D875	A	D	2G
D876	A	D	2F
D901	A	D	20J
D902	A	D	22O
D903	A	D	21N
D904	A	D	22M
D905	A	D	22M
FUSE			
F801	A	D	4P

REF.NO.	LOCATION		
IC			
IC1	A	D	8O
IC201	A	D	17L
IC202	A	D	17J
IC401	A	D	8K
IC501	A	D	20E
IC601	B	C	15G
IC602	A	D	9K
IC603	A	D	13F
IC604	A	D	5K
IC605	A	D	11F
IC901	A	D	21N
COIL			
L1	A	D	8P
L202	A	D	12L
L203	A	D	12L
L204	A	D	12M
L205	A	D	12M
L207	A	D	12J
L208	A	D	12J
L209	A	D	14K
L210	A	D	15N
L211	A	D	15J
L212	A	D	17J
L213	A	D	18J
L214	A	D	15N
L216	A	D	19O
L401	A	D	8J
L441	A	D	6J
L501	A	D	20E
L502	A	D	19E
L503	A	D	20F
L504	A	D	20F
L505	A	D	20E
L601	A	D	12G
L602	A	D	13H
L603	A	D	5J
L851	A	D	2H
L853	A	D	3H
L854	A	D	2D
L901	A	D	20K
TRANSISTOR			
Q1	B	C	7P
Q2	B	C	7P
Q3	B	C	7P
Q6	B	C	10P
Q202	B	C	15K
Q203	B	C	12M
Q204	B	C	13K
Q207	B	C	18O
Q208	B	C	18O
Q209	B	C	17J
Q210	B	C	14N
Q211	B	C	17N
Q212	B	C	13M
Q213	B	C	16K
Q214	B	C	15K
Q215	B	C	15K
Q441	B	C	6I
Q501	B	C	18
Q502	B	C	21F
Q503	B	C	20F
Q601	B	C	11G
Q603	B	C	16G
Q604	A	D	4G
Q605	A	D	18G
Q607	B	C	10M
Q608	B	C	17F
Q609	B	C	15F
Q611	B	C	14E
Q801	A	D	3L
Q802	A	D	2L
Q851	A	D	1E
Q852	B	C	2E
Q853	A	D	3E
Q854	B	C	3D
Q855	A	D	2E
Q858	A	D	4J
Q859	A	D	3E
Q860	A	D	2G
Q861	A	D	3G
Q901	B	C	21I
Q902	A	D	20J
Q903	A	D	20J
Q904	B	C	22N
Q905	B	C	22L
Q906	B	C	22J
Q907	B	C	22K
Q908	B	C	22K
Q910	B	C	21M
Q911	B	C	20L
Q912	B	C	20K
Q913	B	C	20K
Q914	B	C	21O
RESISTOR			
R1	A	D	8O
R2	A	D	8P
R3	A	D	11N
R4	B	C	8P
R5	B	C	8O
R6	B	C	9O
R7	B	C	9O
R8	B	C	8P
R9	B	C	9O
R10	B	C	9P
R11	A	D	9P

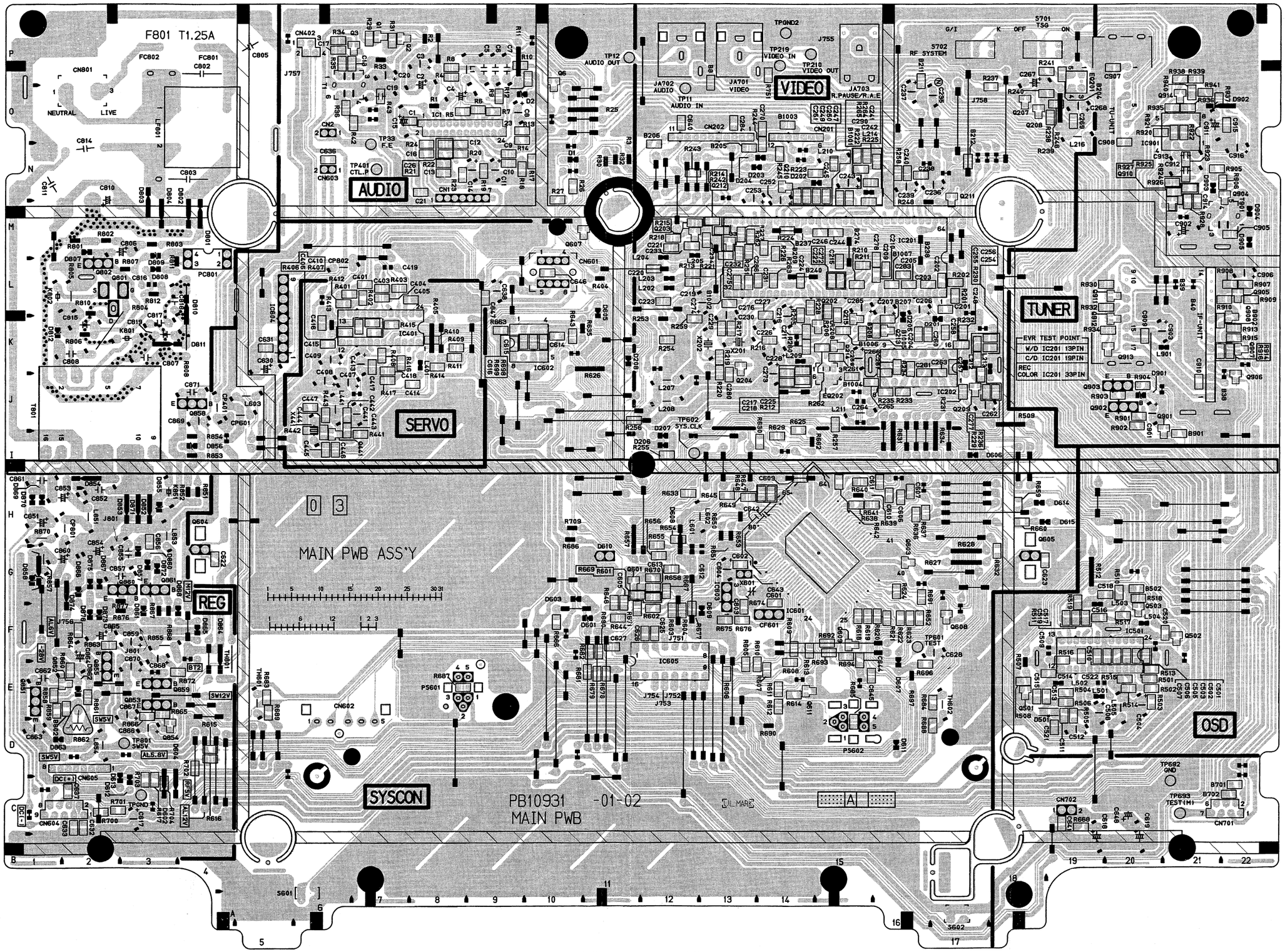
REF.NO.	LOCATION		
R12	B	C	10P
R13	B	C	9O
R14	B	C	9O
R17	B	C	10N
R18	B	C	9N
R19	B	C	9N
R20	B	C	8N
R21	B	C	8N
R22	B	C	8N
R23	B	C	8N
R24	B	C	8N
R25	A	D	10O
R26	B	C	10N
R27	B	C	10N
R29	B	C	7P
R30	A	D	11N
R31	B	C	7P
R32	A	D	11N
R33	A	D	7P
R34	B	C	6P
R35	B	C	6P
R36	B	C	6O
R42	B	C	7O
R43	B	C	7O
R201	B	C	17L
R202	B	C	17L
R205	B	C	14L
R206	B	C	15L
R208	B	C	15L
R210	B	C	15L
R211	B	C	15L
R212	B	C	14J
R213	B	C	12L
R214	B	C	13M
R215	B	C	12M
R216	B	C	14K
R217	B	C	13K
R218	B	C	12M
R219	B	C	13K
R220	B	C	13K
R221	B	C	13L
R222	B	C	15N
R223	B	C	14N
R224	B	C	14M
R225	B	C	15M
R226	B	C	14M
R227	B	C	13M
R228	B	C	14L
R229	B	C	17J
R230	B	C	17K
R231	B	C	17J
R232	B	C	17K
R233	B	C	16J
R234	B	C	16K
R235	B	C	16J
R236	B	C	18J
R237	B	C	18O
R238	B	C	19O
R239	B	C	19O
R240	B	C	18O
R241	B	C	18P
R242	B	C	13M
R243	B	C	12N
R244	B	C	14N
R245	B	C	14N
R246	A	D	19O
R248	A	D	16M
R251	B	C	13M
R252	B	C	13M
R253	A	D	12K
R254	B	C	12K
R255	B	C	12I
R256	B	C	11J
R257	B	C	15J
R258	B	C	16N
R259	B	C	12K
R260	B	C	14K
R261	B	C	15K
R262	B	C	15K
R263	B	C	14L
R264	B	C	15N
R265	B	C	15N
R401	B	C	6L
R402	B	C	7L
R403	B	C	7L
R404	A	D	11L
R405	A	D	8K
R406	B	C	6K
R407	B	C	7K
R408	B	C	7K
R409	B	C	8K
R410	B	C	8K
R411	B	C	8K
R412	B	C	6L
R413	A	D	6K
R414	B	C	8K
R415	B	C	7K
R416	B	C	7K
R417	B	C	7J
R441	B	C	7I
R442	B	C	6J
R443	B	C	6J
R501	B	C	20E
R502	B	C	20E
R503	B	C	20E
R504	B	C	19E
R505	B	C	19E
R506	B	C	19E
R507	A	D	18E
R508	B	C	18E
R509	A	D	18J

REF.NO.	LOCATION		
R510	B	C	20G
R511	B	C	19F
R512	A	D	19G
R513	B	C	20E
R514	B	C	20E
R515	B	C	20E
R516	B	C	19F
R517	B	C	20F
R518	B	C	20G
R519	B	C	19G
R601	B	C	12G
R602	B	C	12F
R603	B	C	12F
R604	B	C	12F
R605	B	C	13E
R606	B	C	13E
R607	B	C	14E
R608	B	C	14E
R609	B	C	14F
R610	B	C	14E
R611	B	C	14E
R612	B	C	14E
R613	B	C	14F
R614	B	C	14E
R615	B	C	4D
R616	B	C	4D
R617	B	C	3C
R618	B	C	15F
R619	B	C	15F
R620	B	C	16F
R621	B	C	16F
R622	B	C	16F
R623	B	C	16F
R624	B	C	16G
R625	B	C	14J
R626	A	D	10K
R627	A	D	17G
R628	A	D	17G
R629	B	C	14I
R630	B	C	14I
R631	A	D	16I
R632	B	C	18G
R633	B	C	12H
R634	A	D	17I
R635	A	D	10K
R636	B	C	16H
R637	B	C	16H
R638	B	C	15H
R639	A	D	15H
R640	B	C	15I
R641	B	C	15H
R642	B	C	15I
R643	B	C	10K
R644	B	C	11F
R645	B	C	13H
R646	B	C	11G
R647	B	C	14H
R648	B	C	14H
R649	B	C	13H
R650	A	D	13H
R651	A	D	13H
R652	B	C	16F
R653	A	D	13H
R654	B	C	12H
R655	B	C	12H
R656	B	C	12G
R657	A	D	11G
R658	B	C	12G
R659	B	C	18H
R660	B	C	18H
R662	A	D	14I
R663	B	C	9K
R666	B	C	10F
R667	B	C	12G
R668	B	C	19C
R669	B	C	11G
R670	B	C	12G
R671	B	C	11F
R674	B	C	14G
R675	B	C	13F
R676	B	C	13F
R677	B	C	12F
R678	B	C	11E
R679	B	C	11E
R680	B	C	11F
R681	B	C	11E
R682	B	C	11F
R683	B	C	5E
R684	B	C	17E
R685	B	C	15D
R686	A	D	10H
R687	B	C	8E
R688	B	C	17D
R689	B	C	5E
R690	A	D	14D
R691	B	C	16G
R692	B	C	15F
R693	B	C	15F
R694	B	C	15F
R696	B	C	16E
R697	A	D	16E
R698	B	C	10K
R699	B	C	10K
R700	B	C	2C
R701	B	C	2C
R702	B	C	4D
R703	B	C	3C
R704	B	C	3C
R709	A	D	10H
R751	B	C	14P
R801	A	D	2M

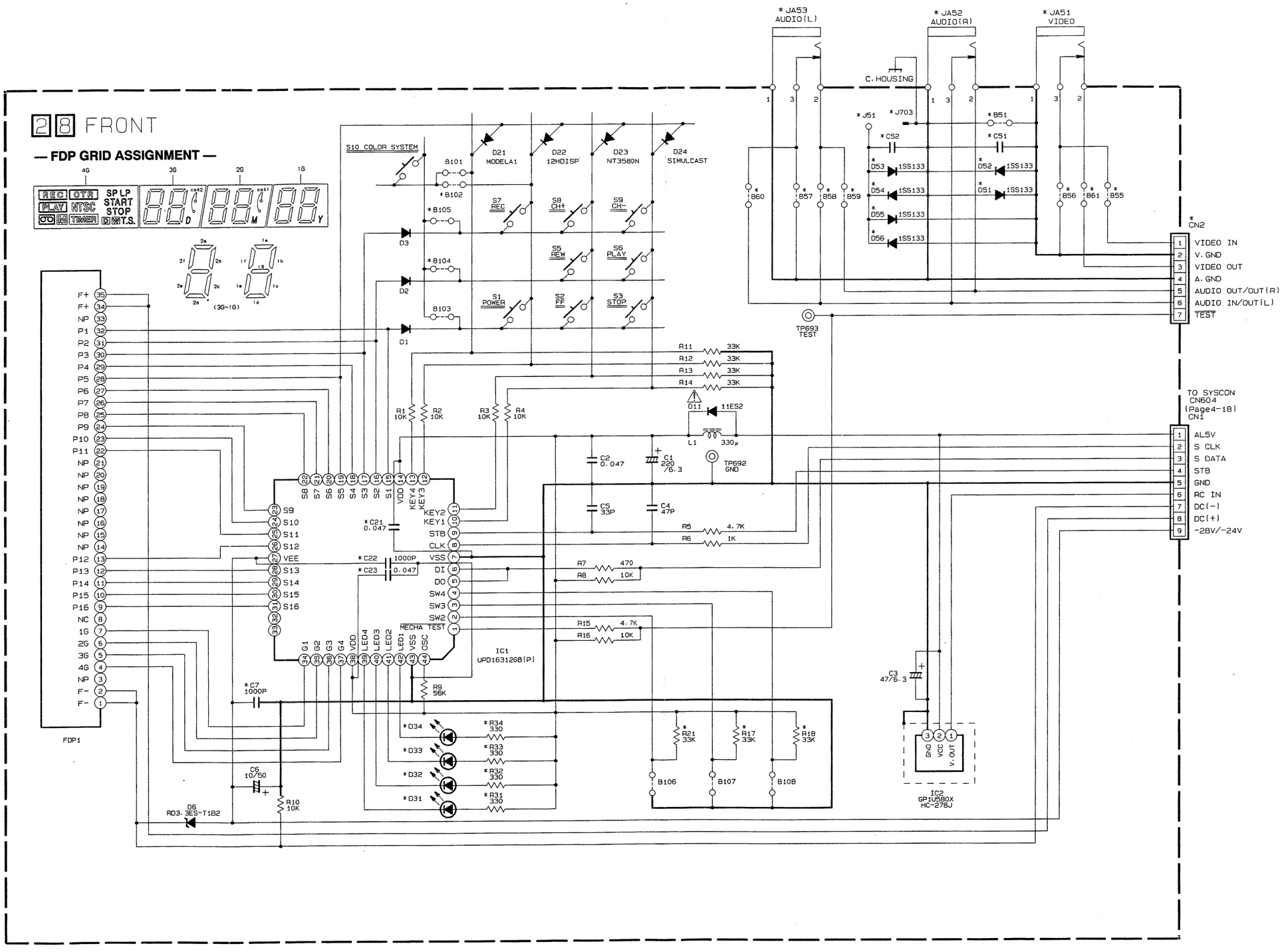
REF.NO.	LOCATION		
R802	A	D	2M
R803	A	D	3M
R804	A	D	2K
R805	A	D	2L
R806	A	D	2K
R807	A	D	2L
R808	A	D	4K
R810	A	D	2L
R811	A	D	3L
R812	A	D	3L
R851	A	D	4I
R852	A	D	4H
R853	A	D	4I
R854	A	D	4I
R855	A	D	3F
R857	A	D	1G
R858	B	C	1E
R859	B	C	1E
R860	B	C	2E
R861	B	C	2E
R862	A	D	2D
R863	B	C	2F
R864	B	C	2F
R865	B	C	3E
R866	B	C	3E
R867	A	D	3F
R868	A	D	3F
R870	A	D	1H
R872	B	C	4E
R876	A	D	3F
R877	A	D	3G
R901	B	C	20J
R902	B	C	20J
R903	B	C	20J
R904	B	C	20J
R905	B	C	21N
R906	B	C	22N
R907	B	C	22L
R908	B	C	22L
R909	B	C	22L
R910	B	C	22L
R913	B	C	22K
R914	B	C	22K
R915	B	C	22K
R916	B	C	21K
R920	B	C	20O
R921	B	C	21O
R922	B	C	21O
R923	B	C	21N
R924	B	C	21N
R925	B	C	21N
R926	B	C	21N
R927	B	C	21N
R928	B	C	21M
R930	B	C	20L
R932	B	C	20L
R934	B	C	20K
R935	B	C	21O
R936	B	C	21O
R937	B	C	21O
R938	B	C	21P
R939	B	C	21P
R940	B	C	21O
R941	B	C	21O
TEST POINT			
TP11	A	D	12O
TP12	A	D	11P
TP33	A	D	7N
TP210	A	D	14P
TP219	A	D	14P
TP401	A	D	7N
TP601	A	D	16F
TP602	A	D	12I
TP692	A	D	21C
TP693	A	D	21C
TP801	A	D	3D
TPGND	A	D	3C
TPGND	A	D	14P
OTHER			
EQ201	A	D	19P
EQ202	A	D	15K
IF-UN	A	D	21J
J801	A	D	2H
JA701	A	D	13P
JA702	A	D	12P
JA703	A	D	15P
K801	A	D	3K
K802	A	D	1L
K851	A	D	3H
LF801	A	D	3N
PC801	A	D	4M
PS601	A	D	8E
PS602	A	D	15D
S601	A	D	6A
S602	A	D	17A
S701	A	D	18P
S702	A	D	17P
T1	A	D	6P
T801	A	D	1J
T901	A	D	22M
TH601	A	D	5E
TH602	A	D	17E
TH801	A	D	4E
TU-UN	A	D	20P
X201	A	D	13K
X202	A	D	13K
X441	A	D	6I
X601	A	D	13G



4.11 MAIN CIRCUIT BOARD



4.12 FRONT SCHEMATIC DIAGRAM



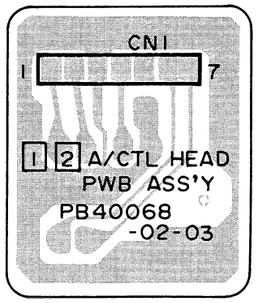
NOTE: Mark(*)is not used.

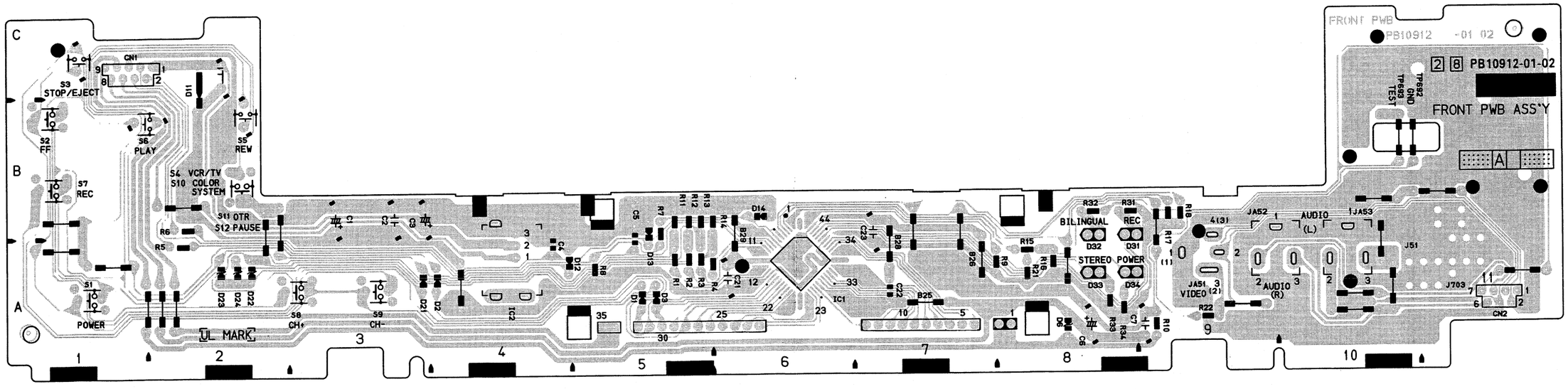
4.13 FRONT AND A/C HEAD CIRCUIT BOARDS

MAIN COMPONENT PARTS LOCATION GUIDE <FRONT>

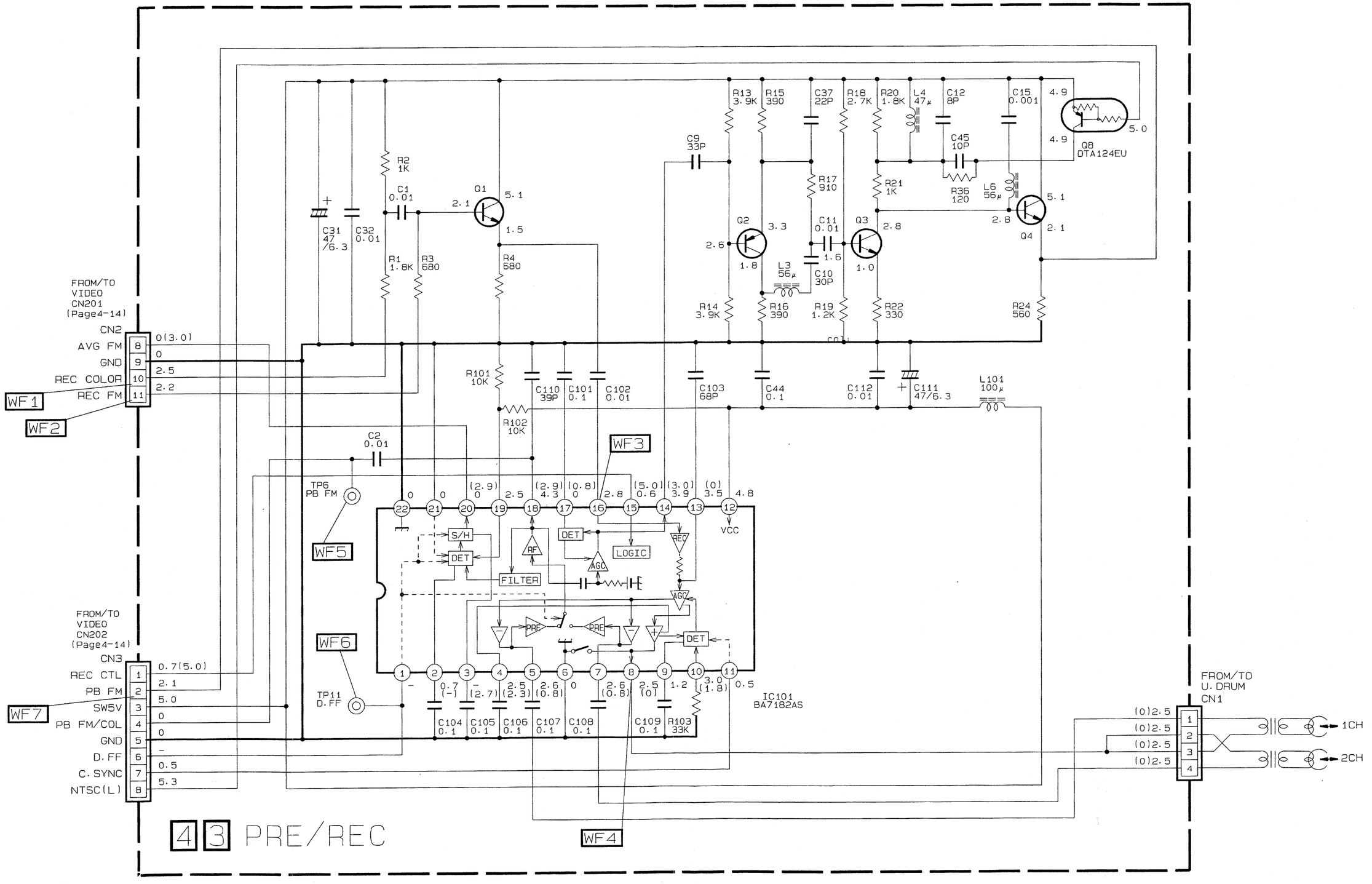
REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION	REF.No.	LOCATION
IC		DIODE		D11	2C	CONNECTOR	
IC1	6A	D1	5A	D21	3A	CN1	1C
IC2	4A	D2	4A	D23	2A		
		D3	5A				
		D6	8A				

— A/C HEAD PWB —

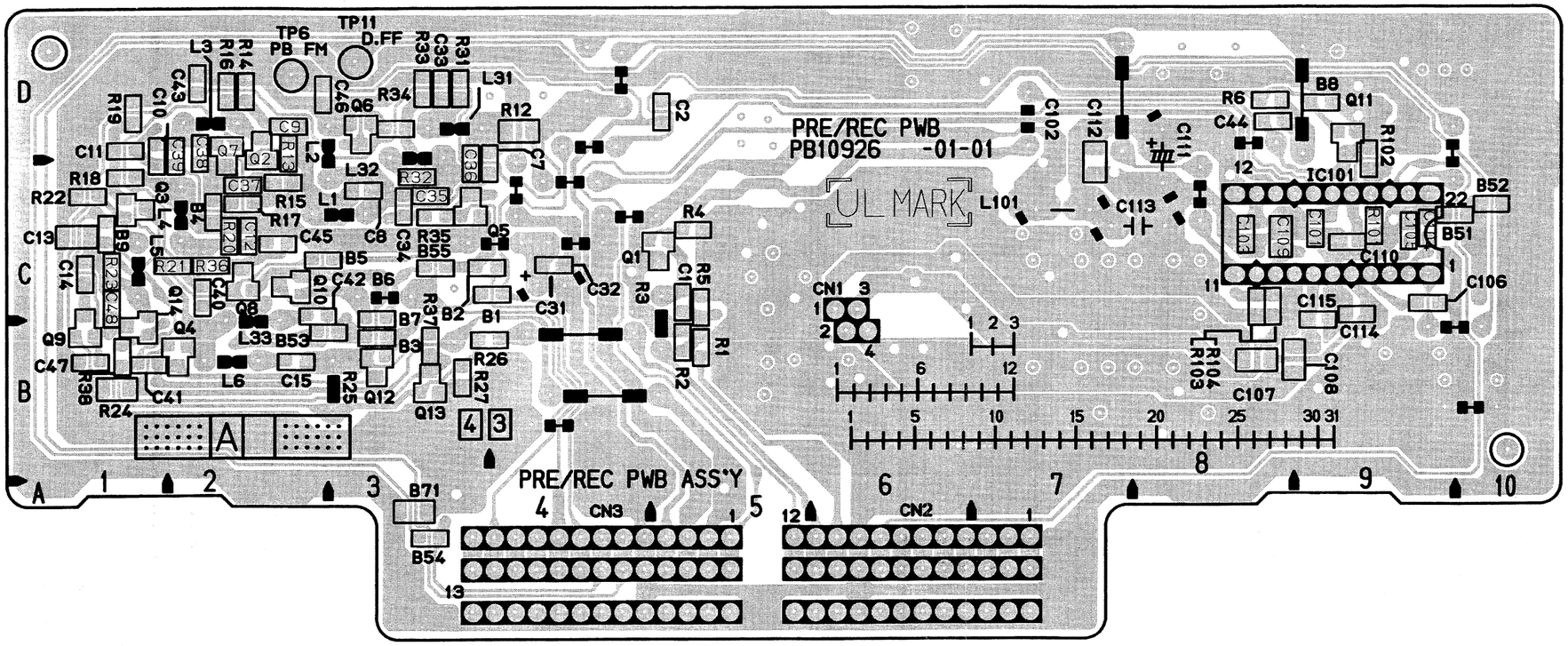




4.14 PRE/REC SCHEMATIC DIAGRAM

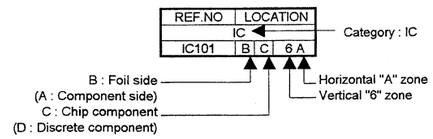


4.15 PRE/REC CIRCUIT BOARD



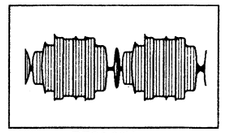
COMPONENT PARTS LOCATION GUIDE

REF.NO	LOCATION	REF.NO	LOCATION	REF.NO	LOCATION	REF.NO	LOCATION	REF.NO	LOCATION	REF.NO	LOCATION	REF.NO	LOCATION	REF.NO	LOCATION	REF.NO	LOCATION
CAPACITOR		C32	B C 4C	C45	B C 2C	C110	B C 9C	COIL		Q2	B C 2D	RESISTOR		R18	B C 1C	R34	B C 3D
C1	B C 5C	C33	B C 3D	C46	B C 2D	C111	A D 8D	L1	A D 3C	Q3	B C 1C	R1	B C 5B	R19	B C 1D	R35	B C 3C
C2	B C 5D	C34	B C 3C	C47	B C 1B	C112	B C 7C	L2	A D 3C	Q4	B C 2B	R2	B C 5B	R20	B C 2C	R36	B C 2C
C7	B C 4C	C35	B C 3C	C48	B C 1C	C113	A D 7C	L3	A D 2D	Q5	B C 3C	R3	A D 5B	R21	B C 2C	R37	B C 3B
C8	B C 3C	C36	B C 3C	C101	B C 9C	C114	B C 9C	L4	A D 2C	Q6	B C 3D	R4	B C 5C	R22	B C 1C	R38	B C 1B
C9	B C 2D	C37	B C 2C	C102	A D 7D	C115	B C 9B	L5	A D 1C	Q7	B C 2D	R5	B C 5C	R23	B C 1C	R101	B C 9C
C10	B C 1D	C38	B C 2D	C103	B C 8C	CONNECTOR		L6	A D 2B	Q8	B C 2C	R6	B C 8D	R24	B C 1B	R102	B C 9C
C11	B C 1D	C39	B C 2D	C104	B C 9C	CN1	A D 6C	L31	A D 3D	Q9	B C 1B	R12	B C 4D	R25	A D 3B	R103	B C 8C
C12	B C 2C	C40	B C 2C	C105	B C 9C	CN2	A D 7A	L32	A D 3D	Q10	B C 2C	R13	B C 2D	R26	B C 4B	R104	B C 8C
C13	B C 1C	C41	B C 1B	C106	B C 9C	CN3	A D 5A	L33	A D 2B	Q11	B C 9D	R14	B C 2D	R27	B C 3B	TEST POINT	
C14	B C 1C	C42	B C 2C	C107	B C 8B	IC		L101	A D 7C	Q12	B C 3B	R15	B C 2C	R31	B C 3D	TP6	A D 2D
C15	B C 2B	C43	B C 2D	C108	B C 9B	IC101	A D 9C	TRANSISTOR		Q13	B C 3B	R16	B C 2D	R32	B C 3C	TP11	A D 3D
C31	A D 4C	C44	B C 8D	C109	B C 8C			Q1	B C 5C	Q14	B C 1B	R17	B C 2C	R33	B C 3D		



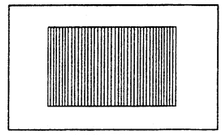
WAVEFORMS
— PRE/REC —

WF1 CN2-10 REC COLOR



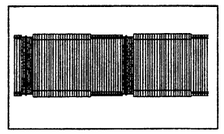
REC0.28Vp-p
10mV/20µsec/DIV

WF2 CN2-11 REC FM



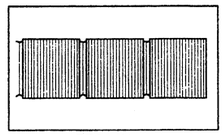
REC0.76Vp-p
20mV/5msec/DIV

WF3 IC101-16



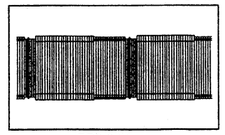
REC0.28Vp-p
10mV/5msec/DIV

WF4 IC101-8



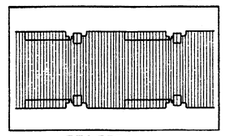
REC2.3Vp-p
50mV/5msec/DIV

WF5 TP6 PB FM



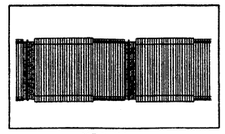
PB0.34Vp-p
10mV/5msec/DIV

WF6 TP11 D.FF



REC/PB5.0Vp-p
0.2V/10msec/DIV

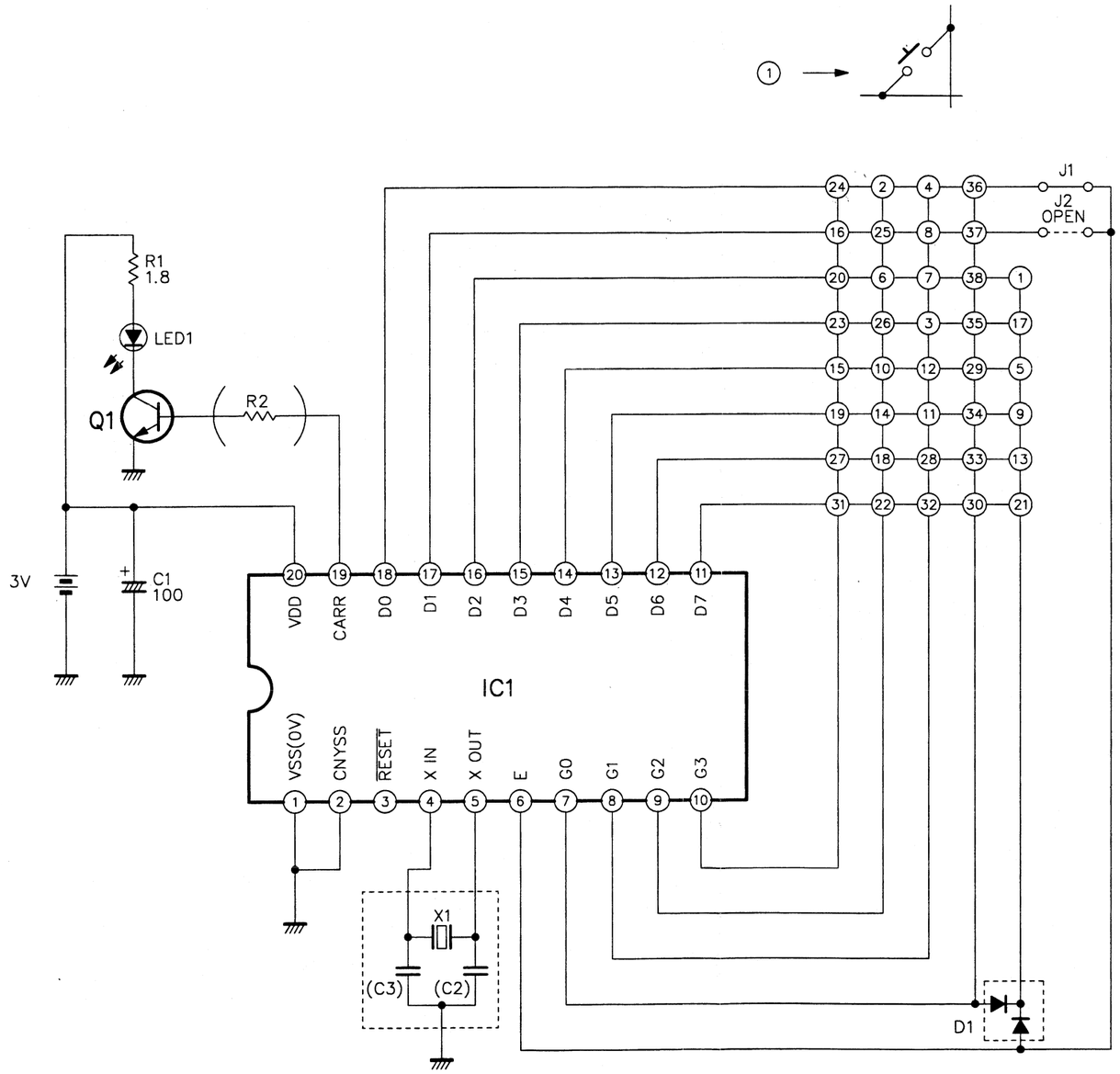
WF7 CN3-2 PB FM



PB0.4Vp-p
20mV/5msec/DIV

4.16 REMOTE CONTROL SCHEMATIC DIAGRAM

NOTE:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.

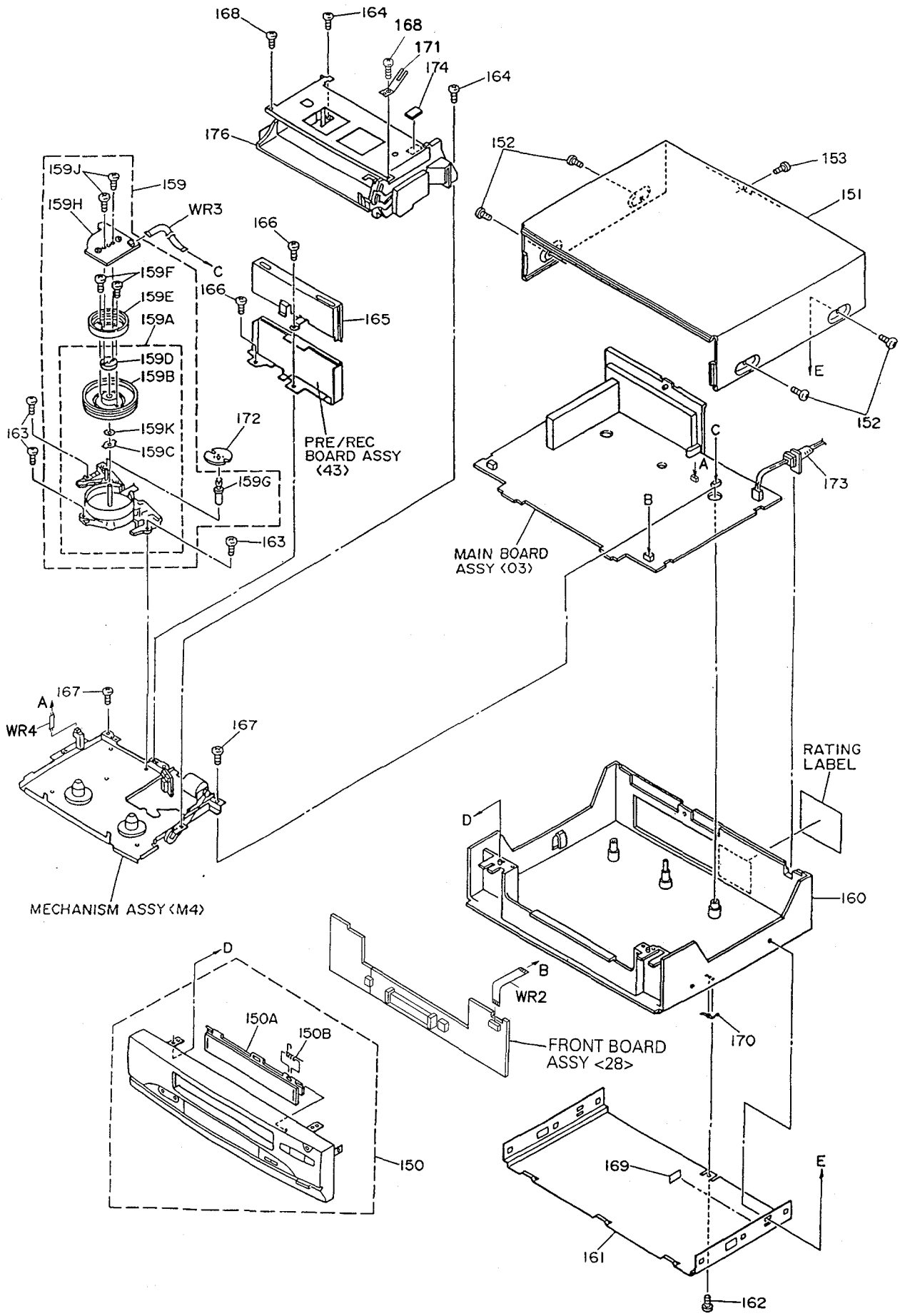


KEY NUMBER	FUNCTION
1	TV POWER
2	MUTE
3	EJECT
4	VCR POWER
5	TV VOLUME +
6	TV CH +
7	VCR/TV
8	SPEED
9	TV VOLUME –
10	TV CH –
11	MEMORY
12	X2 PLAY
13	GO–TO
14	STATUS
15	MENU
16	CLEAR
17	1
18	2
19	3
20	VCR CH +
21	4
22	5
23	6
24	VCR CH –
25	7
26	8
27	9
28	TRACKING +
29	100
30	0
31	SLOW
32	TRACKING –
33	REW/SEARCH
34	PAUSE/STILL
35	REC/OTR
36	FF/SEARCH
37	STOP
38	PLAY

VIDE-V20866 / DRUCK16

SECTION 5
PARTS LIST

1. CABINET AND CHASSIS ASSEMBLY <M2>



1. ACCESSORY ASSEMBLY <M1>

105	4822 320 11117	RF CABLE
110	4822 736 60579	INSTRUCTIONS
114	4822 218 30823	REMOTE CONTROLLER

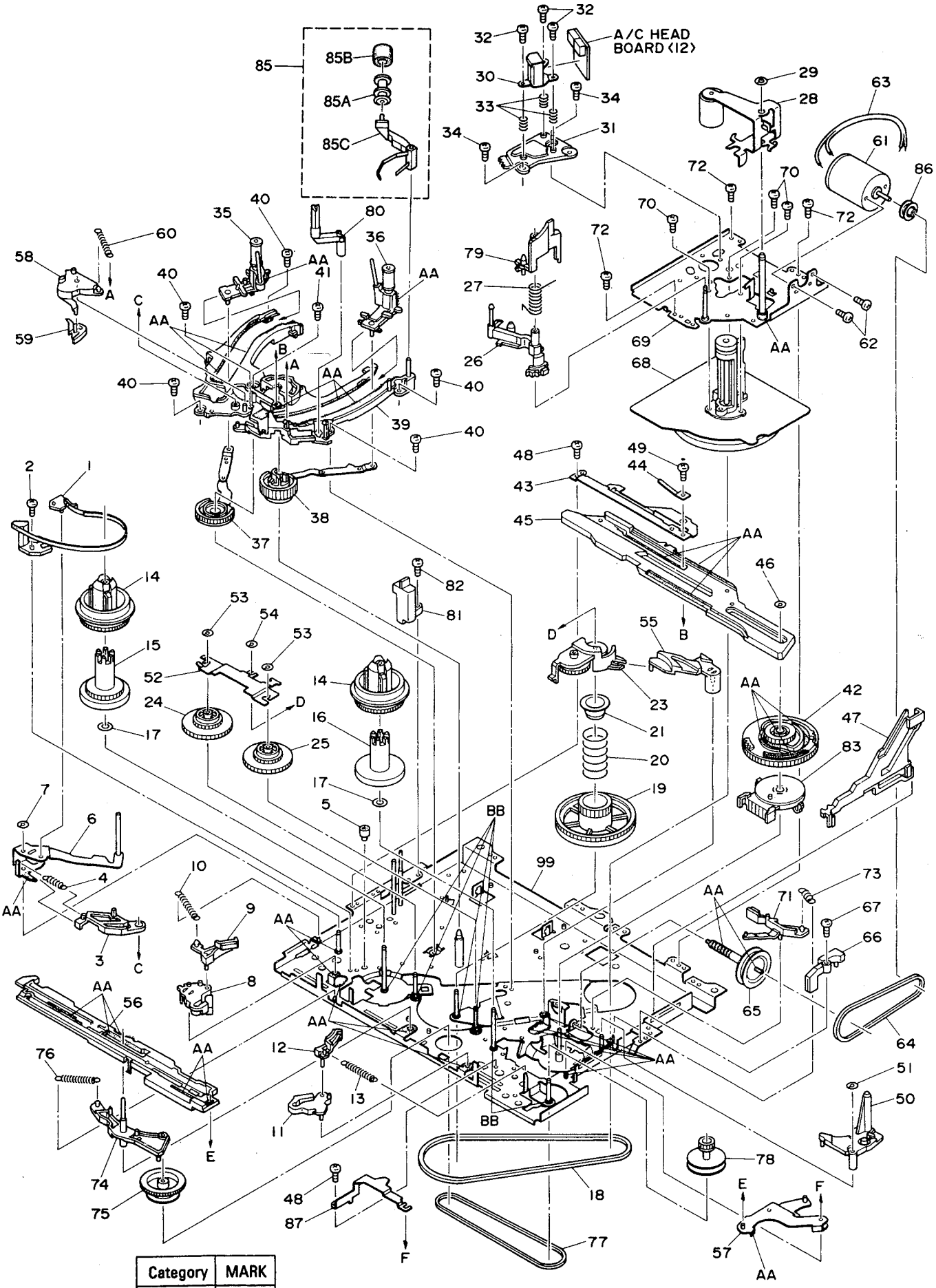
2. CABINET AND CHASSIS ASSEMBLY <M2>

150	4822 443 41624	FRONT PANEL ASSY
150A	4822 443 64527	CASSETTE DOOR
150B	4822 492 42781	TORSION SPRING
151⚠	4822 443 64525	TOP COVER
152	4822 502 30729	SCREW,X4 TOP COVER
153	4822 502 30752	SCREW,TOP COVER
159	4822 691 21087	DRUM ASSY
159A	4822 691 21083	DRUM SUB ASSEMBLY
159B	4822 691 21085	UPPER DRUM ASSEMBLY
159C	4822 479 30181	BRUSH ASSEMBLY
159D	4822 532 12281	COLLAR ASSEMBLY
159E	4822 362 20241	ROTOR ASSEMBLY
159F	4822 502 12111	SCREW,X2
159G	4822 528 90873	ROLLER ASSEMBLY
159H⚠	4822 362 10274	STATOR ASSEMBLY
159J	4822 502 13277	SCREW,X2
159K	4822 532 12258	WASHER
160⚠	4822 464 51114	BOTTOM CHASSIS
161⚠	4822 443 64526	BOTTOM COVER
162	4822 502 30762	SCREW,BOTTOM COVER
163	4822 502 13818	SCREW,X3 DRUM
164	4822 502 30779	SCREW,X2 CASS HOUSING ASSY
165	4822 466 62652	SHIELD CASE,PRE
166	4822 502 21251	SCREW,X2 PRE
167	4822 502 30776	SCREW,X2 MECHA
168	4822 502 13817	SCREW,X2 CASS HOUSING ASSY
169	4822 535 71383	SPACER
170	4822 492 52432	E.SPRING
171	4822 492 71718	EARTH PLATE
172	4822 528 90827	INERTIA PLATE
173⚠	4822 321 11142	POWER CORD
174	4822 535 71382	SPACER
176	4822 691 21055	CASSETTE HOUSING ASSEMBLY

WIRE

WR2	4822 321 62485	WIRE,FRONT
WR3	4822 321 62487	WIRE,DRUM
WR4	4822 321 63043	WIRE,FE HEAD

3. MECHANISM ASSEMBLY <M4>



Category	MARK
Grease	AA
Oil	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

3. MECHANISM ASSEMBLY <M4>

1	4822 401 11568	TENSION BAND ASSEMBLY
2	4822 502 13818	SCREW
3	4822 403 71289	TENSION ARM LEVER
4	4822 492 33497	TENSION SPRING
5	4822 535 93557	ADJUST PIN
6	4822 403 71294	TENSION ARM ASSEMBLY
7	4822 532 12326	SLIT WASHER
8	4822 403 10318	MAIN BRAKE ASSEMBLY(SUPPLY)
9	4822 403 71295	SUB BRAKE ASSEMBLY(SUPPLY)
10	4822 492 33502	TENSION SPRING
11	4822 403 71296	MAIN BRAKE ASSY(TAKE UP)
12	4822 403 71313	SUB BRAKE ASSEMBLY(TAKE UP)
13	4822 492 33501	TENSION SPRING
14	4822 528 10917	REEL DISK,X2
15	4822 528 10918	SLIT DISK(SUPPLY)
16	4822 528 10921	SLIT DISK(TAKE UP)
17	4822 535 71381	SPECER,X2
18	4822 358 31337	BELT(CAPSTAN)
19	4822 528 81558	PULLEYASSY
19A	4822 492 52429	COMPRESSION SPRING
19B	4822 492 90192	SPRING CAP
22	4822 535 71381	SPACER
23	4822 404 31501	IDLER ARM ASSEMNLY
24	4822 528 30427	CLUTCH UNIT(SUPPLY)
25	4822 528 30428	CLUTCH UNIT(TAKE UP)
26	4822 404 31502	GUIDE ARM ASSEMBLY
27	4822 492 33503	TORSION SPRING
28	4822 528 90893	PINCH ROLLER ARM ASSEMBLY
29	4822 532 11784	SLIT WASHER
30	4822 249 10444	AUDIO/CONTROL HEAD
31	4822 466 83217	HEAD BASE
32	4822 502 13812	SPECIAL SCREW,X3
33	4822 492 52267	COMPRESSION SPRING,X3
34	4822 502 30777	SCREW,X2
35	4822 403 71297	POLE BASE ASSY(SUPPLY)
36	4822 403 71298	POLE BASE ASSY(TAKE UP)
37	4822 403 71299	LOADING ARM ASSY(SUPPLY)
38	4822 403 71301	LOADING ARM ASSY(TAKE UP)
39	4822 462 30633	GUIDE RAIL
40	4822 502 13818	SCREW,X4
41	4822 502 30778	SCREW
42	4822 522 33578	CONTROL CAM
43	4822 404 31498	CONTROL BRACKET
44	4822 492 71709	EARTH PLATE
45	4822 466 83214	CONTROL PLATE
46	4822 532 12105	SLIT WASHER
47	4822 466 83216	PINCH PLATE
48	4822 502 30471	SCREW,X2
49	4822 502 30531	SCREW
50	4822 403 71302	LEVER ASSY
51	4822 532 12105	SLIT WASHER
52	4822 403 71292	REEL BRACKET
53	4822 532 12327	SLIT WASHER,X2
54	4822 532 12328	WASHER
55	4822 403 71291	IDLER LEVER
56	4822 459 80803	SLIDE PLATE
57	4822 403 71303	CHANGE LEVER ASSEMBLY
58	4822 403 71288	TAKE UP LEVER
59	4822 249 10514	TAKE UP HEAD
60	4822 492 33499	TENSION SPRING
61⚠	4822 361 21766	MODE MOTOR
62	4822 502 21365	SCREW,X2
63	4822 321 63037	WIRE
64	4822 358 31338	BELT
65	4822 522 10482	WORM GEAR ASSMBLY
66	4822 520 10787	WORM BEARING
67	4822 502 30471	SCREW
68⚠	4822 361 60517	CAPSTAN MOTOR
69	4822 464 51091	SUB DECK ASSEMBLY
70	4822 502 12949	SCREW,X3
71	4822 403 71305	CAPSTAN BRAKE ASSEMBLY
72	4822 502 30471	SCREW,X3
73	4822 492 33496	TENSION SPRING,C.BRAKE
74	4822 403 71304	CHANGE ARM ASSEMBLY
75	4822 522 10479	CHANGE GEAR
76	4822 492 33498	TENSION SPRING
77	4822 358 31339	BELT
78	4822 522 10481	CASSETTE GEAR
79	4822 462 30634	LID GUIDE
80	4822 381 20202	LED PRISM
81	4822 249 40307	FULL ERASE HEAD
82	4822 503 21013	SCREW
83	4822 691 21046	ROTARY ENCODER
85	4822 403 71306	CLEANER ASSEMBLY
85A	4822 528 90894	CLEANER ROLLER
85B	4822 532 52686	CLEANER
85C	4822 403 71293	CLEANER ARM
86	4822 528 81557	MOTOR PULLEY
87	4822 404 31499	CONTROL BRACKET 2
92	4822 502 13818	SCREW
99	4822 464 51088	MAIN DECK ASSEMBLY

⚠ ... Safety component, use only this type

4. MAIN BOARD ASSEMBLY <03>

PCB

PWBA	4822 214 60548	MAIN BOARD ASSEMBLY

EARTH PLATE

ETH1	4822 492 71711	EARTH PLATE(RF)
HS1⚠	4822 255 41286	HEAT SINK

SWITCHES

SCW1	4822 502 30597	SCREW
SPC1	4822 535 71384	SPACER,X2 MECHA

TERMINAL BOARD

TB1	4822 443 64601	TERMINAL BOARD ASSY
TNR1⚠	4822 210 10667	TUNER UNIT
TNR2⚠	4822 210 10664	IF UNIT

INTEGRATED CIRCUITS

IC1	4822 209 32735	BA7795LS
IC201	4822 209 90622	JCP0045B-1
IC202	4822 209 90633	TL8849P
IC401	4822 209 90631	BU2885S
IC501	4822 209 90493	UPD6464CS-502
IC601	4822 209 90632	HD6433928TA02F
IC602	4822 209 90635	XLJ93LC46A
IC603	4822 209 32537	S-80728AN-Z
IC604	4822 209 30619	TA7291S
IC605	4822 209 33811	M50253P
IC901	4822 209 30246	AN1358

TRANSISTORS

Q1	4822 130 60863	2SA1576(QR)
Q2	4822 130 60863	2SA1576(QR)
Q3	4822 130 61539	2SC4081(QR)
Q6	4822 130 60997	DTC144WU
Q203	4822 130 60669	2SC4081(QRS)
Q204	4822 130 60669	2SC4081(QRS)
Q207	4822 130 60862	2SA1576(QRS)
Q208	4822 130 60862	2SA1576(QRS)
Q209	4822 130 60862	2SA1576(QRS)
Q210	4822 130 60856	DTC144EU
Q211	4822 130 60856	DTC144EU
Q212	4822 130 60862	2SA1576(QRS)
Q214	4822 130 60862	2SA1576(QRS)
Q215	4822 130 61903	DTA114EU
Q441	4822 130 60669	2SC4081(RS)
Q501	4822 130 63604	2SC4998
Q502	4822 130 60669	2SC4081(QRS)
Q601	4822 130 60669	2SC4081(QRS)
Q604	4822 130 62798	PN268VI
Q605	4822 130 62798	PN268VI
Q607	4822 130 63595	DTC143EU
Q608	4822 130 61553	DTC124EU
Q609	4822 130 61553	DTC124EU
Q611	4822 130 61553	DTC124EU
Q801	4822 130 63371	2SK2043-CB14
Q802	4822 130 62794	2SC3616(ML)
Q851	4822 130 62801	2SD2166
Q852	4822 130 60669	2SC4081(RS)
Q853	4822 130 62794	2SC3616(MLK)
Q854	4822 130 61903	DTA114EU
Q855	4822 130 61892	2SD2144S(UVW)
Q858	4822 130 42431	2SC1740S(RS)
Q859	4822 130 61544	2SD1450S,T
Q860	4822 130 63827	2SA1198(SE)
Q861	4822 130 61886	2SD1292(QR)
Q902	4822 130 62589	2SB810H,J
Q903	4822 130 62793	2SC3068
Q904	4822 130 60862	2SA1576(RS)
Q905	4822 130 60669	2SC4081(RS)
Q906	4822 130 61906	DTC114EU
Q908	4822 130 60862	2SA1576(RS)
Q910	4822 130 60669	2SC4081(RS)
Q911	4822 130 63862	DTA123YU
Q912	4822 130 63862	DTA123YU
Q913	4822 130 63862	DTA123YU
Q914	4822 130 63628	DTA144TU

DIODES

D1	4822 130 80448	1N4148M
D201	4822 130 80448	1N4148M
D202	4822 130 80448	1N4148M
D203	4822 130 80448	1N4148M
D204	4822 130 80448	1N4148M
D206	4822 130 80448	1N4148M
D207	4822 130 80448	1N4148M
D501	4822 130 83988	1SV163
D601	4822 130 80793	RD9.1ES-T1B2
D602	4822 130 81748	11ES2
D603	4822 130 80448	1N4148M
D604	4822 130 81748	11ES2
D605	4822 130 80448	1N4148M
D606	4822 130 80448	1N4148M
D607	4822 130 80448	1N4148M
D608	4822 130 81748	11ES2
D609	4822 130 80448	1N4148M
D610	4822 130 83429	SIR-381SB3FM
D614	4822 130 80448	1N4148M
D615	4822 130 80448	1N4148M
D801	4822 130 82698	10E6-F2
D802	4822 130 82698	10E6-F2
D803	4822 130 82698	10E6-F2
D804	4822 130 82698	10E6-F2
D808	4822 130 80448	1N4148M
D809	4822 130 82691	UZ27BSB
D810	4822 130 82686	AU01
D811	4822 130 82686	AU01
D852	4822 130 82696	RL2Z-LFB2
D853	4822 130 82696	RL2Z-LFB2
D854	4822 130 82695	RK14LF-B2
D855	4822 130 83149	RD15ES-T1B1
D856	4822 130 83156	RD6.2ES-T1B3
D857	4822 130 83947	1SS131Y
D858	4822 130 83942	RD24ES-T1B3
D860	4822 130 83947	1SS131Y
D861	4822 130 83987	MTZ20DT-77
D862	4822 130 83304	RD5.1JSB2
D863	4822 130 80448	1N4148M
D864	4822 130 81748	11ES2
D865	4822 130 83947	1SS131Y
D866	4822 130 83987	MTZ20DT-77
D867	4822 130 83947	1SS131Y
D868	4822 130 83947	1SS131Y
D869	4822 130 80448	1N4148M
D870	4822 130 80448	1N4148M
D872	4822 130 83947	1SS131Y
D873	4822 130 83944	RD39ES-T1B3
D874	4822 130 83947	1SS131Y
D875	4822 130 83947	1SS131Y
D876	4822 130 83947	1SS131Y
D901	4822 130 83986	MTZ10D
D902	4822 209 83931	HZT31
D903	4822 130 80448	1N4148M
D904	4822 130 80448	1N4148M
D905	4822 130 80448	1N4148M

RESISTORS

R1	4822 050 23903	RESISTOR 39k,1/6W
R2	4822 050 12201	RESISTOR 220,1/6W
R3	4822 116 81536	RESISTOR 1k,1/6W
R4	4822 116 83151	RESISTOR 12k,1/10W
R5	4822 116 83186	RESISTOR 5.6k,1/10W

⚠ ... Safety component, use only this type

R6	4822 117 10016	RESISTOR 1.2k,1/10W
R7	4822 116 83156	RESISTOR 15k,1/10W
R8	4822 116 83191	RESISTOR 680,1/10W
R10	4822 117 10017	RESISTOR 220,1/10W
R11	4822 116 81538	RESISTOR 15k,1/6W
R12	4822 116 83156	RESISTOR 15k,1/10W
R13	4822 116 83145	RESISTOR 1k,1/10W
R14	4822 116 83145	RESISTOR 1k,1/10W
R17	4822 116 83183	RESISTOR 47k,1/10W
R18	4822 116 83161	RESISTOR 18k,1/10W
R19	4822 116 83184	RESISTOR 4.7M,1/10W
R21	4822 116 83196	RESISTOR 8.2k,1/10W
R22	4822 116 83171	RESISTOR 270k,1/10W
R23	4822 116 83149	RESISTOR 120,1/10W
R24	4822 116 83169	RESISTOR 27k,1/10W
R25	4822 116 81536	RESISTOR 1k,1/6W
R26	4822 116 83151	RESISTOR 12k,1/10W
R27	4822 116 83146	RESISTOR 10k,1/10W
R29	4822 116 83183	RESISTOR 47k,1/10W
R30	4822 050 12703	RESISTOR 27k,1/6W
R31	4822 116 83183	RESISTOR 47k,1/10W
R32	4822 050 11803	RESISTOR 18k,1/6W
R33	4822 117 10435	RESISTOR 82,1/6W
R34	4822 117 10431	RESISTOR 3.3,1/10W
R35	4822 116 83151	RESISTOR 12k,1/10W
R36	4822 116 83196	RESISTOR 8.2k,1/10W
R42	4822 116 83192	RESISTOR 6.8k,1/10W
R43	4822 116 83169	RESISTOR 27k,1/10W
R201	4822 116 83155	RESISTOR 1.5k,1/10W
R202	4822 116 83155	RESISTOR 1.5k,1/10W
R208	4822 116 83145	RESISTOR 1k,1/10W
R210	4822 051 30512	RESISTOR 5.1k,1/10W
R211	4822 117 10016	RESISTOR 1.2k,1/10W
R212	4822 116 83178	RESISTOR 390,1/10W
R213	4822 116 83189	RESISTOR 620,1/10W
R214	4822 116 83159	RESISTOR 1.8k,1/10W
R215	4822 116 83163	RESISTOR 2.2k,1/10W
R216	4822 116 83174	RESISTOR 330,1/10W
R217	4822 116 83146	RESISTOR 10k,1/10W
R218	4822 116 83145	RESISTOR 1k,1/10W
R219	4822 116 83196	RESISTOR 8.2k,1/10W
R220	4822 116 83159	RESISTOR 1.8k,1/10W
R221	4822 116 83174	RESISTOR 330,1/10W
R222	4822 116 83169	RESISTOR 27k,1/10W
R224	4822 116 83148	RESISTOR 1M,1/10W
R225	4822 116 83182	RESISTOR 4.7k,1/10W
R226	4822 116 83164	RESISTOR 22k,1/10W
R227	4822 116 83145	RESISTOR 1k,1/10W
R229	4822 116 83159	RESISTOR 1.8k,1/10W
R231	4822 116 83185	RESISTOR 560,1/10W
R232	4822 116 83163	RESISTOR 2.2k,1/10W
R233	4822 116 83163	RESISTOR 2.2k,1/10W
R234	4822 116 83175	RESISTOR 3.3k,1/10W
R235	4822 116 83195	RESISTOR 820,1/10W
R236	4822 116 83191	RESISTOR 680,1/10W
R237	4822 116 83194	RESISTOR 75,1/10W
R238	4822 116 83156	RESISTOR 15k,1/10W
R239	4822 116 83145	RESISTOR 1k,1/10W
R240	4822 116 83146	RESISTOR 10k,1/10W
R241	4822 116 83145	RESISTOR 1k,1/10W
R242	4822 116 83145	RESISTOR 1k,1/10W
R243	4822 116 83193	RESISTOR 68k,1/10W
R244	4822 116 83185	RESISTOR 560,1/10W
R245	4822 116 83176	RESISTOR 33k,1/10W
R246	4822 050 13901	RESISTOR 390,1/2W
R248	4822 050 18203	RESISTOR 82k,1/6W
R252	4822 116 83175	RESISTOR 3.3k,1/10W
R253	4822 111 31004	RESISTOR 820k,1/6W
R254	4822 117 11895	RESISTOR 3.9M,1/10W
R255	4822 116 83169	RESISTOR 27k,1/10W
R256	4822 116 83168	RESISTOR 2.7k,1/10W
R257	4822 117 11895	RESISTOR 3.9M,1/10W
R258	4822 117 10023	RESISTOR 470k,1/10W
R260	4822 116 81645	RESISTOR 1k,1/10W
R261	4822 116 81645	RESISTOR 1k,1/10W
R262	4822 116 81659	RESISTOR 2.2k,1/10W
R263	4822 116 82176	RESISTOR 1M,1/6W
R401	4822 116 83185	RESISTOR 560,1/10W
R402	4822 116 83185	RESISTOR 560,1/10W
R403	4822 116 83145	RESISTOR 1k,1/10W
R404	4822 116 81536	RESISTOR 1k,1/6W
R405	4822 116 81536	RESISTOR 1k,1/6W
R406	4822 116 83145	RESISTOR 1k,1/10W
R407	4822 116 83342	RESISTOR 2.4k,1/10W
R408	4822 116 83186	RESISTOR 5.6k,1/10W
R409	4822 116 83146	RESISTOR 10k,1/10W
R410	4822 116 83145	RESISTOR 1k,1/10W
R411	4822 116 83146	RESISTOR 10k,1/10W
R412	4822 116 83146	RESISTOR 10k,1/10W
R415	4822 116 83163	RESISTOR 2.2k,1/10W
R441	4822 116 83182	RESISTOR 4.7k,1/10W
R442	4822 116 83147	RESISTOR 100k,1/10W
R443	4822 116 83187	RESISTOR 56k,1/10W
R501	4822 116 83142	RESISTOR 0,1/10W
R502	4822 116 83142	RESISTOR 0,1/10W
R503	4822 116 83142	RESISTOR 0,1/10W
R504	4822 051 30512	RESISTOR 5.1k,1/10W
R505	4822 116 83155	RESISTOR 1.5k,1/10W
R506	4822 116 83147	RESISTOR 100k,1/10W
R507	4822 116 81636	RESISTOR 10k,1/6W
R509	4822 050 11004	RESISTOR 100k,1/6W
R510	4822 116 83142	RESISTOR 0,1/10W
R512	4822 116 81641	RESISTOR 4.7k,1/6W
R513	4822 116 83146	RESISTOR 10k,1/10W
R515	4822 116 83146	RESISTOR 10k,1/10W
R516	4822 116 83142	RESISTOR 0,1/10W
R517	4822 116 83142	RESISTOR 0,1/10W
R519	4822 116 83142	RESISTOR 0,1/10W
R601	4822 116 83142	RESISTOR 0,1/10W
R602	4822 116 83182	RESISTOR 4.7k,1/10W
R603	4822 116 83182	RESISTOR 4.7k,1/10W
R604	4822 116 83182	RESISTOR 4.7k,1/10W
R605	4822 116 83182	RESISTOR 4.7k,1/10W
R606	4822 116 83182	RESISTOR 4.7k,1/10W
R607	4822 116 83182	RESISTOR 4.7k,1/10W
R608	4822 116 83182	RESISTOR 4.7k,1/10W
R609	4822 116 83182	RESISTOR 4.7k,1/10W
R610	4822 116 83182	RESISTOR 4.7k,1/10W
R611	4822 116 83182	RESISTOR 4.7k,1/10W
R612	4822 116 83182	RESISTOR 4.7k,1/10W
R613	4822 116 83182	RESISTOR 4.7k,1/10W
R614	4822 116 83182	RESISTOR 4.7k,1/10W
R618	4822 116 83175	RESISTOR 3.3k,1/10W
R619	4822 116 83175	RESISTOR 3.3k,1/10W
R622	4822 116 83142	RESISTOR 0,1/10W
R623	4822 116 83142	RESISTOR 0,1/10W
R624	4822 116 83142	RESISTOR 0,1/10W
R625	4822 116 83142	RESISTOR 0,1/10W
R626	4822 116 81536	RESISTOR 1k,1/6W
R628	4822 116 81536	RESISTOR 1k,1/6W
R629	4822 116 83182	RESISTOR 4.7k,1/10W
R630	4822 116 83145	RESISTOR 1k,1/10W
R632	4822 116 83182	RESISTOR 4.7k,1/10W
R633	4822 116 83182	RESISTOR 4.7k,1/10W
R634	4822 116 81536	RESISTOR 1k,1/6W
R635	4822 116 81536	RESISTOR 1k,1/6W
R636	4822 116 83175	RESISTOR 3.3k,1/10W
R637	4822 116 83182	RESISTOR 4.7k,1/10W
R638	4822 116 83145	RESISTOR 1k,1/10W
R639	4822 050 11001	RESISTOR 100,1/6W
R640	4822 116 83145	RESISTOR 1k,1/10W
R641	4822 116 83145	RESISTOR 1k,1/10W
R642	4822 116 83145	RESISTOR 1k,1/10W
R643	4822 116 83145	RESISTOR 1k,1/10W
R644	4822 117 10017	RESISTOR 220,1/10W
R645	4822 116 83182	RESISTOR 4.7k,1/10W
R646	4822 116 83178	RESISTOR 390,1/10W
R647	4822 116 83182	RESISTOR 4.7k,1/10W
R648	4822 116 83142	RESISTOR 0,1/10W
R649	4822 116 83182	RESISTOR 4.7k,1/10W
R652	4822 116 83142	RESISTOR 0,1/10W
R654	4822 116 83182	RESISTOR 4.7k,1/10W
R655	4822 116 83182	RESISTOR 4.7k,1/10W
R656	4822 116 83182	RESISTOR 4.7k,1/10W
R657	4822 116 81641	RESISTOR 4.7k,1/6W
R658	4822 116 83145	RESISTOR 1k,1/10W
R659	4822 116 83181	RESISTOR 470,1/10W
R660	4822 116 83163	RESISTOR 2.2k,1/10W
R662	4822 116 82086	RESISTOR 680,1/6W
R663	4822 116 83147	RESISTOR 100k,1/10W
R666	4822 116 83183	RESISTOR 47k,1/10W
R667	4822 116 83176	RESISTOR 33k,1/10W
R669	4822 116 83146	RESISTOR 10k,1/10W
R670	4822 116 83192	RESISTOR 6.8k,1/10W

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R671	4822 116 83147	RESISTOR 100k,1/10W
R674	4822 116 83148	RESISTOR 1M,1/10W
R675	4822 116 83182	RESISTOR 4.7k,1/10W
R676	4822 116 83182	RESISTOR 4.7k,1/10W
R677	4822 116 83145	RESISTOR 1k,1/10W
R678	4822 116 83146	RESISTOR 10k,1/10W
R679	4822 116 83146	RESISTOR 10k,1/10W
R680	4822 116 83146	RESISTOR 10k,1/10W
R681	4822 116 83146	RESISTOR 10k,1/10W
R682	4822 116 83146	RESISTOR 10k,1/10W
R685	4822 117 10017	RESISTOR 220,1/10W
R686	4822 050 17509	RESISTOR 75,1/6W
R687	4822 117 10017	RESISTOR 220,1/10W
R688	4822 116 83164	RESISTOR 22k,1/10W
R689	4822 116 83156	RESISTOR 15k,1/10W
R690	4822 116 81636	RESISTOR 10k,1/6W
R691	4822 116 83145	RESISTOR 1k,1/10W
R692	4822 116 83147	RESISTOR 100k,1/10W
R693	4822 116 83147	RESISTOR 100k,1/10W
R694	4822 116 83147	RESISTOR 100k,1/10W
R696	4822 116 83181	RESISTOR 470,1/10W
R697	4822 116 81638	RESISTOR 33k,1/6W
R698	4822 116 83147	RESISTOR 100k,1/10W
R700	4822 116 83181	RESISTOR 470,1/10W
R701	4822 116 83144	RESISTOR 100,1/10W
R751	4822 116 83194	RESISTOR 75,1/10W
R801	4822 111 50565	RESISTOR 220k,1/6W
R802	4822 111 50565	RESISTOR 220k,1/6W
R803	4822 111 30976	RESISTOR 68k,1/6W
R804	4822 117 10008	OMF RESISTOR 330,2W
R805	4822 117 10052	MF RESISTOR 0.39,1W
R806	4822 116 81727	RESISTOR 3.3k,1/6W
R808	4822 116 83141	OMF RESISTOR 68k,2W
R810	4822 111 50565	RESISTOR 220k,1/6W
R811	4822 116 81537	RESISTOR 1.5k,1/6W
R812	4822 116 81542	RESISTOR 2.2k,1/6W
R851	4822 116 81536	RESISTOR 1k,1/6W
R852	4822 050 23741	CMF RESISTOR 374,1/4W
R853	4822 050 24871	CMF RESISTOR 487,1/4W
R854	4822 050 11202	RESISTOR 1.2k,1/6W
R855	4822 117 11443	OMF RESISTOR 1k,2W
R857	4822 117 11442	OMF RESISTOR 330,1W
R858	4822 116 83181	RESISTOR 470,1/10W
R859	4822 116 83145	RESISTOR 1k,1/10W
R860	4822 116 83181	RESISTOR 470,1/10W
R861	4822 116 83146	RESISTOR 10k,1/10W
R863	4822 117 10437	RESISTOR 510,1/10W
R864	4822 116 83181	RESISTOR 470,1/10W
R865	4822 116 83181	RESISTOR 470,1/10W
R866	4822 116 83183	RESISTOR 47k,1/10W
R867	4822 050 16802	RESISTOR 6.8k,1/6W
R868	4822 116 81536	RESISTOR 1k,1/6W
R870	4822 117 11893	MF RESISTOR 15,1W
R872	4822 117 10017	RESISTOR 220,1/10W
R876	4822 116 81536	RESISTOR 1k,1/6W
R877	4822 116 81536	RESISTOR 1k,1/6W
R901	4822 116 83155	RESISTOR 1.5k,1/10W
R902	4822 116 83156	RESISTOR 15k,1/10W
R903	4822 116 83174	RESISTOR 330,1/10W
R904	4822 116 83144	RESISTOR 100,1/10W
R905	4822 116 83146	RESISTOR 10k,1/10W
R906	4822 116 83159	RESISTOR 1.8k,1/10W
R907	4822 116 83164	RESISTOR 22k,1/10W
R908	4822 116 83156	RESISTOR 15k,1/10W
R909	4822 116 83146	RESISTOR 10k,1/10W
R910	4822 116 83146	RESISTOR 10k,1/10W
R916	4822 116 83145	RESISTOR 1k,1/10W
R920	4822 116 83145	RESISTOR 1k,1/10W
R921	4822 116 83164	RESISTOR 22k,1/10W
R922	4822 116 83164	RESISTOR 22k,1/10W
R923	4822 116 83157	RESISTOR 150k,1/10W
R924	4822 116 83157	RESISTOR 150k,1/10W
R925	4822 116 83176	RESISTOR 33k,1/10W
R926	4822 116 83167	RESISTOR 270,1/10W
R927	4822 116 83146	RESISTOR 10k,1/10W
R928	4822 116 83146	RESISTOR 10k,1/10W
R930	4822 116 83142	RESISTOR 0,1/10W
R932	4822 116 83142	RESISTOR 0,1/10W
R934	4822 116 83142	RESISTOR 0,1/10W
R935	4822 116 83183	RESISTOR 47k,1/10W
R936	4822 116 83183	RESISTOR 47k,1/10W
R937	4822 116 83183	RESISTOR 47k,1/10W
R938	4822 116 83163	RESISTOR 2.2k,1/10W
R939	4822 116 83163	RESISTOR 2.2k,1/10W
R940	4822 116 83165	RESISTOR 220k,1/10W

CAPACITORS

C2	4822 124 23846	E CAPACITOR 47µF,16V
C3	4822 124 23873	E CAPACITOR 10µF,16V
C4	4822 124 23287	E CAPACITOR 1µF,50V
C5	4822 126 13708	CAPACITOR 0.0068µF,25V
C7	4822 126 13708	CAPACITOR 0.0068µF,25V
C8	4822 124 23826	E CAPACITOR 10µF,16V
C9	4822 126 12801	CAPACITOR 0.022µF,25V
C10	4822 126 12801	CAPACITOR 0.022µF,25V
C11	4822 124 80305	E CAPACITOR 22µF,10V
C12	4822 126 12801	CAPACITOR 0.022µF,25V
C13	4822 126 11649	CAPACITOR 0.012µF,25V
C14	4822 124 80889	E CAPACITOR 33µF,10V
C15	4822 124 23848	E CAPACITOR 4.7µF,25V
C16	4822 126 12904	CAPACITOR 680pF,50V
C17	4822 126 12466	CAPACITOR 0.022µF,50V
C18	4822 126 11654	CAPACITOR 0.0047µF,50V
C19	4822 121 43968	F CAPACITOR 0.082µF,50V
C20	4822 124 23873	E CAPACITOR 10µF,16V
C21	4822 126 11614	CAPACITOR 330pF,50V
C26	4822 126 12904	CAPACITOR 680pF,50V
C201	4822 126 11601	CAPACITOR 0.01µF,50V
C202	4822 126 12384	CAPACITOR 33pF,50V
C203	4822 126 13651	CAPACITOR 0.47µF,16V
C204	4822 126 13651	CAPACITOR 0.47µF,16V
C205	4822 126 13709	CAPACITOR 1µF,16V
C206	4822 124 80306	E CAPACITOR 4.7µF,25V
C207	4822 124 80306	E CAPACITOR 4.7µF,25V
C209	4822 126 13256	CAPACITOR 0.1µF,25V
C210	4822 126 13256	CAPACITOR 0.1µF,25V
C215	4822 126 12819	CAPACITOR 180pF,50V
C216	4822 124 80305	E CAPACITOR 22µF,10V
C217	4822 126 13711	CAPACITOR 820pF,50V
C219	4822 126 12885	CAPACITOR 22pF,50V
C221	4822 126 12806	CAPACITOR 68pF,50V
C223	4822 126 11601	CAPACITOR 0.01µF,50V
C224	4822 126 13256	CAPACITOR 0.1µF,25V
C225	4822 126 12441	CAPACITOR 10pF,50V
C226	4822 124 81003	E CAPACITOR 2.2µF,50V
C227	4822 126 12801	CAPACITOR 0.022µF,25V
C228	4822 124 80306	E CAPACITOR 4.7µF,25V
C229	4822 126 11613	CAPACITOR 0.0022µF,50V
C230	4822 124 23832	E CAPACITOR 1µF,50V
C231	4822 126 12806	CAPACITOR 68pF,50V
C232	4822 126 11601	CAPACITOR 0.01µF,50V
C233	4822 126 12819	CAPACITOR 180pF,50V
C234	4822 126 11601	CAPACITOR 0.01µF,50V
C235	4822 124 81254	NP E CAPACITOR 0.47µF,5
C236	4822 124 23862	E CAPACITOR 4.7µF,25V
C237	4822 124 80306	E CAPACITOR 4.7µF,25V
C238	4822 126 13651	CAPACITOR 0.47µF,16V
C239	4822 124 23862	E CAPACITOR 4.7µF,25V
C240	4822 126 13705	CAPACITOR 0.033µF,16V
C241	4822 126 11601	CAPACITOR 0.01µF,50V
C242	4822 126 12398	CAPACITOR 150pF,50V
C243	4822 124 23863	E CAPACITOR 1µF,50V
C244	4822 126 12444	CAPACITOR 680pF,50V
C245	4822 126 12462	CAPACITOR 0.01µF,50V
C246	4822 126 11612	CAPACITOR 0.001µF,50V
C247	4822 126 11601	CAPACITOR 0.01µF,50V
C248	4822 126 11601	CAPACITOR 0.01µF,50V
C249	4822 126 13256	CAPACITOR 0.1µF,25V
C250	4822 126 13263	CAPACITOR 0.047µF,16V
C251	4822 126 13256	CAPACITOR 0.1µF,25V
C252	4822 124 23863	E CAPACITOR 1µF,50V
C253	4822 124 23863	E CAPACITOR 1µF,50V
C254	4822 126 13049	CAPACITOR 27pF,50V
C257	4822 126 11601	CAPACITOR 0.01µF,50V
C258	4822 126 13256	CAPACITOR 0.1µF,25V
C259	4822 124 23832	E CAPACITOR 1µF,50V
C260	4822 126 13651	CAPACITOR 0.47µF,16V
C261	4822 126 11601	CAPACITOR 0.01µF,50V
C262	4822 124 23826	E CAPACITOR 10µF,16V
C263	4822 126 11601	CAPACITOR 0.01µF,50V
C264	4822 126 11647	CAPACITOR 0.01µF,16V
C265	4822 126 11601	CAPACITOR 0.01µF,50V

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C266	4822 126 11654	CAPACITOR 0.0047µF,50V
C267	4822 124 42276	E CAPACITOR 470µF,6.3V
C268	4822 124 23874	E CAPACITOR 47µF,16V
C269	4822 126 11601	CAPACITOR 0.01µF,50V
C270	4822 126 11601	CAPACITOR 0.01µF,50V
C272	4822 126 13256	CAPACITOR 0.1µF,25V
C273	4822 124 23824	E CAPACITOR 100µF,6.3V
C274	4822 124 23824	E CAPACITOR 100µF,6.3V
C275	4822 126 12428	CAPACITOR 56pF,50V
C276	4822 126 13256	CAPACITOR 0.1µF,25V
C277	4822 126 12896	CAPACITOR 8pF,50V
C278	4822 126 12443	CAPACITOR 47pF,50V
C285	4822 126 11428	CAPACITOR 1µF,16V
C286	4822 126 10429	CAPACITOR 22pF,50V
C290	4822 126 13707	CAPACITOR 75pF,50V
C401	4822 126 11612	CAPACITOR 0.001µF,50V
C403	4822 126 11612	CAPACITOR 0.001µF,50V
C404	4822 126 12802	CAPACITOR 0.056µF,25V
C405	4822 126 11832	CAPACITOR 100pF,50V
C406	4822 126 13256	CAPACITOR 0.1µF,25V
C407	4822 124 23826	E CAPACITOR 10µF,16V
C408	4822 124 23826	E CAPACITOR 10µF,16V
C409	4822 124 23824	E CAPACITOR 100µF,6.3V
C410	4822 126 13256	CAPACITOR 0.1µF,25V
C413	4822 124 23832	E CAPACITOR 1µF,50V
C415	4822 126 11649	CAPACITOR 0.012µF,25V
C418	4822 126 12819	CAPACITOR 180pF,50V
C441	4822 124 23826	E CAPACITOR 10µF,16V
C442	4822 126 12462	CAPACITOR 0.01µF,50V
C443	4822 126 11602	CAPACITOR 39pF,50V
C444	4822 126 12443	CAPACITOR 47pF,50V
C445	4822 126 11602	CAPACITOR 39pF,50V
C446	4822 126 11832	CAPACITOR 100pF,50V
C504	4822 124 81249	E CAPACITOR 100µF,6.3V
C505	4822 126 11601	CAPACITOR 0.01µF,50V
C506	4822 126 11833	CAPACITOR 27pF,50V
C507	4822 126 11833	CAPACITOR 27pF,50V
C508	4822 124 81252	E CAPACITOR 10µF,16V
C509	4822 126 11647	CAPACITOR 0.01µF,16V
C511	4822 126 11613	CAPACITOR 0.0022µF,50V
C512	4822 124 23832	E CAPACITOR 1µF,50V
C513	4822 126 11612	CAPACITOR 0.001µF,50V
C514	4822 126 12805	CAPACITOR 18pF,50V
C515	4822 126 12806	CAPACITOR 68pF,50V
C516	4822 126 11832	CAPACITOR 100pF,50V
C520	4822 126 11832	CAPACITOR 100pF,50V
C521	4822 126 13712	CAPACITOR 15pF,50V
C601	4822 125 60198	TRIM CAPACITOR,TIMER CLOC
C602	4822 126 11606	CAPACITOR 18pF,16V
C603	4822 126 12462	CAPACITOR 0.01µF,50V
C604	4822 124 23826	E CAPACITOR 10µF,16V
C605	4822 126 11833	CAPACITOR 27pF,50V
C612	4822 126 11689	CAPACITOR 0.001µF,50V
C615	4822 126 12462	CAPACITOR 0.01µF,50V
C617	4822 124 80889	E CAPACITOR 33µF,10V
C619	4822 124 81256	E CAPACITOR 2200µF,6.3V
C627	4822 126 12462	CAPACITOR 0.01µF,50V
C628	4822 124 23824	E CAPACITOR 100µF,6.3V
C630	4822 124 80317	E CAPACITOR 10µF,16V
C631	4822 126 12462	CAPACITOR 0.01µF,50V
C636	4822 126 13256	CAPACITOR 0.1µF,25V
C638	4822 124 80383	E CAPACITOR 220µF,16V
C642	4822 126 12797	CAPACITOR 0.1µF,16V
C802⚠	4822 121 70393	F CAPACITOR 0.068µF
C803⚠	4822 121 43979	F CAPACITOR 0.033µF
C806	4822 124 23852	E CAPACITOR 2.2µF,50V
C808	4822 121 43972	F CAPACITOR 0.1µF,50V
C810	4822 124 23819	E CAPACITOR 68µF,400V
C811⚠	4822 126 13364	CAPACITOR 0.0022µF
C814⚠	4822 126 13664	CAPACITOR 100pF
C815	4822 121 70689	F CAPACITOR 0.0082µF,50
C816	4822 126 12368	CAPACITOR 150pF,50V
C817	4822 124 11223	CAPACITOR 0.0047µF,1kV
C818	4822 126 12905	CAPACITOR 100pF,1kV
C819	4822 126 12905	CAPACITOR 100pF,1kV
C851	4822 124 81208	E CAPACITOR 100µF,10V
C853	4822 124 81209	E CAPACITOR 680µF,10V
C854	4822 124 81211	E CAPACITOR 820µF,16V
C855	4822 121 43348	F CAPACITOR 0.022µF,50V
C856	4822 126 12462	CAPACITOR 0.01µF,50V
C857	4822 121 70419	F CAPACITOR 0.018µF,50V
C859	4822 124 81214	E CAPACITOR 22µF,50V
C860	4822 124 23853	E CAPACITOR 22µF,50V
C861	4822 121 43346	F CAPACITOR 0.01µF,50V
C862	4822 121 43345	F CAPACITOR 0.001µF,50V
C863	4822 124 80308	E CAPACITOR 100µF,6.3V
C864	5322 124 41431	E CAPACITOR 22µF,6.3V
C866	4822 124 23873	E CAPACITOR 10µF,16V
C868	4822 124 23874	E CAPACITOR 47µF,16V
C869	4822 124 23869	E CAPACITOR 0.47µF,50V
C870	4822 124 80311	E CAPACITOR 100µF,16V
C901	4822 124 23861	E CAPACITOR 33µF,16V
C902	4822 124 23851	E CAPACITOR 10µF,50V
C903	4822 124 81003	E CAPACITOR 2.2µF,50V
C905	4822 126 11636	CAPACITOR 0.022µF,50V
C906	4822 124 23869	E CAPACITOR 0.47µF,50V
C911	4822 124 23851	E CAPACITOR 10µF,50V
C912	4822 121 43963	F CAPACITOR 0.015µF,50V
C913	4822 121 43966	F CAPACITOR 0.033µF,50V
C914	4822 126 12462	CAPACITOR 0.01µF,50V
C915	4822 126 11651	CAPACITOR 0.0012µF,50V
C916	4822 124 23865	E CAPACITOR 0.22µF,50V

COILS

L1	4822 157 63399	COIL 12mH
L202	4822 157 70954	COIL 22µH
L203	4822 157 70955	COIL 47µH
L204	4822 157 90199	COIL 82µH
L205	4822 157 71755	COIL 150µH
L207	4822 157 70123	COIL 100µH
L208	4822 157 70123	COIL 100µH
L209	4822 157 70373	COIL 10µH
L210	4822 157 71203	COIL
L211	4822 157 70123	COIL 100µH
L213	4822 157 62374	COIL 15µH
L214	4822 157 62377	COIL 22µH
L216	4822 157 60104	COIL 100µH
L501	4822 157 70954	COIL 22µH
L502	4822 157 71756	COIL 4.7µH
L504	4822 157 62372	COIL 10µH
L505	4822 157 71241	COIL
L601	4822 157 62372	COIL 10µH
L602	4822 157 70715	COIL 1µH
L603	4822 157 71754	COIL 10µH
L851	4822 157 70119	COIL
L853	4822 157 70119	COIL
EQ202	4822 153 70081	LOW PASS FILTER

RESONATOR

CF601⚠	4822 242 81533	RESONATOR

CRYSTALS

X201⚠	4822 242 82159	CRYSTAL RESONATOR
X202⚠	4822 242 82124	CRYSTAL RESONATOR
X441⚠	4822 242 81621	CRYSTAL RESONATOR
X601⚠	4822 242 81531	CRYSTAL RESONATOR

SWITCHES

S601	4822 276 13623	PUSH SWITCH,CASS.SW
S602	4822 276 13432	PUSH SWITCH,REC SF SW
S701	4822 277 21798	SLIDE SWITCH,RF TEST SW
S702	4822 277 21798	SLIDE SWITCH,RF SYSTEM

TRANSFORMERS

T1⚠	4822 148 81344	OSC TRANSFORMER

FERRITE BEADS

K801	4822 158 60653	FERRITE BEADS
K851	4822 158 60653	FERRITE BEADS

⚠ ... Safety component, use only this type

PHOTO COUPLER

PC801	⚠4822 130 83425	PS2561L-1(WL)
PS601	4822 209 90487	REEL SENSOR,TAKE UP
PS602	4822 209 90487	REEL SENSOR,SUPPLY

TRANSFORMERS

T801	⚠ 4822 146 31481	SW TRANS
T901	4822 157 70714	COIL

SWITCHES

SCW2	4822 502 30597	SCREW

FUSE

FC801	⚠4822 256 92131	FUSE CLIP,F801
FC802	⚠4822 256 92131	FUSE CLIP,F801

JACK

JA701	4822 264 30321	PIN JACK
JA702	4822 264 30319	PIN JACK
J751	4822 321 63102	WIRE

Filters

LF801	⚠4822 157 71262	LINE FILTER

CONNECTORS

CN1	4822 321 63041	WIRE,(1-7)A/C HEAD
CN2	4822 267 31679	CONNECTOR,(1-2)FE
CN201	4822 265 31288	CONNECTOR,(8-11)PRE/REC
CN202	4822 265 41523	CONNECTOR,(8-11)PRE/REC
CN402	4822 267 41232	CONNECTOR,(1-4)DRUM MOTOR
CN601	4822 265 41526	CONNECTOR,(1-8)CAP MDA
CN602	4822 265 31291	CN,(1-5)ROTARY ENCODER
CN603	4822 267 31679	CN,(1-2)LOADING MOTOR
CN604	4822 267 51483	CONNECTOR,(1-9)FRONT
CN702	4822 265 41535	SHORT PIN
CN801	⚠4822 267 31776	CONNECTOR,(1-2)AC IN
CP401	⚠5322 157 53342	ICP-N15
CP601	⚠4822 209 63612	ICP-N25
CP801	⚠4822 209 63611	ICP-N20
CP802	⚠4822 209 63612	ICP-N25

FUSE

F801	⚠ 4822 070 31252	FUSE T1.2A

5. AUDIO/CONTROL HEAD BOARD ASSY <12>

PCB

PWBA	4822 214 60488	A/CTL HEAD BOARD ASSEMBLY

CONNECTOR

CN1	4822 267 70336	CONNECTOR,(1-7)MAIN

6. FRONT BOARD ASSEMBLY <28>

PCB

PWBA	4822 214 60544	FRONT BOARD ASSEMBLY

INTEGRATED CIRCUITS

IC1	4822 209 90282	UPD16312GB(M)
IC2	4822 209 32726	GP1U580X

DIODES

D1	4822 130 80448	1N4148M
D2	4822 130 80448	1N4148M
D3	4822 130 80448	1N4148M
D6	4822 130 83943	RD3.3ES-T1B2
D11	4822 130 81748	11ES2
D21	4822 130 80448	1N4148M
D23	4822 130 80448	1N4148M

RESISTORS

R1	4822 116 81636	RESISTOR 10k,1/6W
R2	4822 116 81636	RESISTOR 10k,1/6W
R3	4822 116 81636	RESISTOR 10k,1/6W
R4	4822 116 81636	RESISTOR 10k,1/6W
R5	4822 116 81641	RESISTOR 4.7k,1/6W
R6	4822 116 81536	RESISTOR 1k,1/6W
R7	4822 116 81729	RESISTOR 470,1/6W
R8	4822 116 81636	RESISTOR 10k,1/6W
R9	4822 050 15603	RESISTOR 56k,1/6W
R10	4822 116 81636	RESISTOR 10k,1/6W
R11	4822 116 81638	RESISTOR 33k,1/6W
R12	4822 116 81638	RESISTOR 33k,1/6W
R13	4822 116 81638	RESISTOR 33k,1/6W
R14	4822 116 81638	RESISTOR 33k,1/6W
R15	4822 116 81641	RESISTOR 4.7k,1/6W
R16	4822 116 81636	RESISTOR 10k,1/6W

CAPACITORS

C1	4822 124 80354	E CAPACITOR 220µF,6.3V
C2	4822 126 13253	CAPACITOR 0.047µF,16V
C3	4822 124 80704	E CAPACITOR 47µF,6.3V
C4	4822 126 13266	CAPACITOR 47pF,50V
C5	4822 126 11643	CAPACITOR 33pF,50V
C6	4822 124 80318	E CAPACITOR 10µF,50V
C21	4822 126 13253	CAPACITOR 0.047µF,16V
C22	4822 126 11689	CAPACITOR 0.001µF,50V
C23	4822 126 13253	CAPACITOR 0.047µF,16V

COILS

L1	4822 157 71205	COIL 330µH

SWITCHES

S1	4822 276 13309	TACT SWITCH,POWER
S2	4822 276 13309	TACT SWITCH,FF
S3	4822 276 13309	TACT SWITCH,STOP
S5	4822 276 13309	TACT SWITCH,REW
S6	4822 276 13309	TACT SWITCH,PLAY
S7	4822 276 13309	TACT SWITCH,REC
S8	4822 276 13309	TACT SWITCH,CH+
S9	4822 276 13309	TACT SWITCH,CH-
S10	4822 276 13642	TACT SWITCH

⚠ ... Safety component, use only this type

DISPLAY

FDP1	4822 130 91513	PEDP0075-03
HD1	4822 256 71005	FDP HOLDER(L)
HD2	4822 256 71006	FDP HOLDER(R)

CONNECTORS

CN1	4822 267 51429	CONNECTOR,(1-9)MAIN

7. PRE/REC AMP BOARD ASSEMBLY <43>

PCB

PWBA	4822 214 60546	PRE/REC BOARD ASSEMBLY

INTEGRATED CIRCUITS

IC101	4822 209 32546	BA7182AS

TRANSISTORS

Q1	4822 130 60669	2SC4081(QRS)
Q2	4822 130 60862	2SA1576(QRS)
Q3	4822 130 60669	2SC4081(QRS)
Q4	4822 130 60669	2SC4081(QRS)
Q8	4822 130 60854	DTA124EU

RESISTORS

R1	4822 051 30182	RESISTOR 1.8k,1/16W
R2	4822 051 30102	RESISTOR 1k,1/16W
R3	4822 116 82086	RESISTOR 680,1/6W
R4	4822 051 30681	RESISTOR 680,1/16W
R12	4822 116 83142	RESISTOR 0,1/10W
R13	4822 051 30392	RESISTOR 3.9k,1/16W
R14	4822 051 30392	RESISTOR 3.9k,1/16W
R15	4822 051 30391	RESISTOR 390,1/16W
R16	4822 051 30391	RESISTOR 390,1/16W
R17	4822 051 30911	RESISTOR 910,1/16W
R18	4822 051 30272	RESISTOR 2.7k,1/16W
R19	4822 051 30122	RESISTOR 1.2k,1/16W
R20	4822 051 30182	RESISTOR 1.8k,1/16W
R21	4822 051 30102	RESISTOR 1k,1/16W
R22	4822 051 30331	RESISTOR 330,1/16W
R24	4822 116 83185	RESISTOR 560,1/10W
R27	4822 051 30008	RESISTOR 0,1/16W
R36	4822 051 30121	RESISTOR 120,1/16W
R101	4822 051 30103	RESISTOR 10k,1/16W
R102	4822 051 30103	RESISTOR 10k,1/16W
R103	4822 051 30333	RESISTOR 33k,1/16W

CAPACITORS

C1	4822 126 11621	CAPACITOR 0.01µF,50V
C2	4822 126 11621	CAPACITOR 0.01µF,50V
C9	4822 126 10029	CAPACITOR 33pF,50V
C10	4822 126 12891	CAPACITOR 30pF,50V
C11	4822 126 11621	CAPACITOR 0.01µF,50V
C12	4822 122 90066	CAPACITOR 8pF,50V
C15	4822 126 10015	CAPACITOR 0.001µF,50V
C31	4822 124 23825	E CAPACITOR 47µF,6.3V
C32	4822 126 11573	CAPACITOR 0.01µF,25V
C37	4822 126 10026	CAPACITOR 22pF,50V
C44	4822 126 13348	CAPACITOR 0.1µF,16V
C45	4822 122 33985	CAPACITOR 10pF,50V
C101	4822 126 13348	CAPACITOR 0.1µF,16V
C102	4822 126 11647	CAPACITOR 0.01µF,16V
C103	4822 126 10034	CAPACITOR 68pF,50V
C104	4822 126 13348	CAPACITOR 0.1µF,16V
C105	4822 126 13348	CAPACITOR 0.1µF,16V
C106	4822 126 13348	CAPACITOR 0.1µF,16V
C107	4822 126 13287	CAPACITOR 0.1µF,25V
C108	4822 126 13287	CAPACITOR 0.1µF,25V
C109	4822 126 13287	CAPACITOR 0.1µF,25V
C110	4822 122 33988	CAPACITOR 39pF,50V
C111	4822 124 80704	E CAPACITOR 47µF,6.3V
C112	4822 126 12462	CAPACITOR 0.01µF,50V

COILS

L3	4822 157 70139	COIL 56µH
L4	4822 157 62378	COIL 47µH
L6	4822 157 62379	COIL 56µH
L101	4822 157 70127	COIL 100µH

SWITCHES

SLD1	4822 464 51095	SHIELD FRAME,PRE/REC

CONNECTORS

CN1	4822 267 41106	CONNECTOR,(1-4)UPPER DRUM
CN2	4822 265 31289	CONNECTOR,(8-11)MAIN
CN3	4822 265 41525	CONNECTOR,(1-8)MAIN

⚠ ... Safety component, use only this type

SECTION 6
TECHNICAL INFORMATION

6.1 SYSCON CIRCUIT

6.1.1 Syscon CPU pin function (IC601) 1/2

PIN NO.	LABEL	IN/OUT	NOTE
1	S.CURVE	IN	TUNING CHECK
2	AVRGFM	IN	AUTO TRACKING DATA(AVERAGE VOLTAGE OF PB FM LEVEL)INPUT
3	P.DOWN	IN	POWER DOWN DETECT(POWER DOWN:H -> L)
4	6.5H DET	IN	PB SWITCHING POINT ADJUST PULSE
5	AVSS	-	GND
6	TEST	-	GND
7	X2	-	TIMER CLOCK(32.768KHz)
8	X1	-	TIMER CLOCK(32.768KHz)
9	VSS	-	GND
10	OSC1	IN	SYSTEM CLOCK(10MHz)
11	OSC2	OUT	SYSTEM CLOCK(10MHz)
12	RESET	IN	RESET AT CONNECT VCR TO AC
13	(NMI)	-	NC
14	LSC	IN	MECHANISM MODE DETECT(C)
15	LSB	IN	MECHANISM MODE DETECT(B)
16	LSA	IN	MECHANISM MODE DETECT(A)
17	C.L.END	IN	CASSETTE TAPE LOAD SWITCH(CASSETTE IN: L)
18	RECSF	IN	REC SAFETY SW DETECT (SW ON:L)
19	STTS	IN	LEADER TAPE DETECT(DETECT ON:L)
20	ENDS	IN	TRAILER TAPE DETECT(DETECT ON:L)
21	R.PAUSE	IN	REMOTE PAUSE CONTROL(PAUSE ON:L)
22	TU FG	IN	TAKE-UP REEL ROTATION DET/TAPE REMAIN
23	SUP FG	IN	SUPPLY REEL ROTATION DET/TAPE REMAIN
24	A.MUTE	OUT	AUDIO MUTE CONTROL(MUTE ON:H)
25	STILL	-	NC
26	JSB	-	NC
27	JSA	-	NC
28	SERVO	OUT	CAPSTAN MOTOR CONTROL(SERVO:L/SYSCON:H)
29	LCM1	OUT	LOADING MOTOR DRIVE(1)
30	LCM2	OUT	LOADING MOTOR DRIVE(2)
31	H SEL	OUT	HEAD SELECT CONTROL(SP:L/LP:M/EP:H)
32	A/M/S	OUT	PRE/REC CIRCUIT CONTROL(AUTO:M/MANUAL:H/S&S:L)
33	REC ST	OUT	REC START:H
34	H. RECST	-	NC
35	FLY ST	-	NC
36	C. BOX CTL	-	NC
37	V.REC	OUT	VIDEO REC MODE:H
38	D. CLK	-	NC
39	TU CLK	OUT	SERIAL DATA SHIFT CLOCK OUTPUT
40	TU DATA	OUT	TUNING CONTROL SERIAL DATA OUTPUT

6.1.2 Syscon CPU pin function (IC601) 2/2

PIN NO.	LABEL	IN/OUT	NOTE
41	SYNC.D	IN	SYNC DETECT(NO SYNC:H)
42	S-DATA	OUT	SERVO IC CONTROL DATA
43	LOCK DET	OUT	TUNING LOCK CHECK
44	T.MUTE	IN	TUNER MUTE CONTROL(MUTE ON:H)
45	VPCTL	OUT	V.PULSE ADDITION TIMING CONTROL
46	PAUSE	OUT	CAPSTAN MOTOR CONTROL(PAUSE:L)
47	CAP REV	OUT	CAPSTAN MOTOR CONTROL (FWD:H/REV:L)
48	RAE OUT	-	NC
49	STATUS	-	NC
50	RC IN	IN	REMOTE CONTROL DATA INPUT
51	COMPU	IN	AV COMPULINK MODE
52	CTL C/D	IN	CTL PULSE INPUT(MODE DETECT/BLANK PORTION DET)
53	NC	-	NC
54	D-DATA	-	NC
55	P.MUTE	OUT	PICTURE MUTE CONTROL(MUTE:L)
56	CSB	OUT	ON SCREEN IC CHIP SELECT
57	S-OUT	OUT	ON SCREEN CONTROL DATA
58	S-IN	IN	ON SCREEN/FDP CONTROL DATA
59	S-CLK	OUT	DATA TRANSFER CLOCK
60	H DATA	OUT	VIDEO IC CONTROL DATA
61	STB	OUT	CLOCK OUTPUT PERMISSION
62	H CLK	OUT	VIDEO IC DATA TRANSFER CLOCK
63	VCC	-	SYSTEM POWER
64	M DATA	OUT	MEMORY IC DATA
65	E.DATA	OUT	EXPANDER DATA
66	TU-CE	OUT	TUNER UNIT CHIP ENABLE
67	CTL CLOCK	IN	INDEX CONTROL
68	M-CE	OUT	MEMORY IC CHIP ENABLE
69	CAP FG	IN	TAPE SPEED DETECT/BACK SPACE COUNT
70	DUTY I/0	IN/OUT	IN/OUT INDEX DATA CONTROL
71	D.FF	IN	DRUM ROTATION DETECT/REC TIMING CONTROL
72	AVCC		SYSTEM POWER (for ANALOG)
73	REC CTL V	OUT	NC
74	ND	-	NC
75	DRUM V	OUT	DRUM MOTOR CONTROL
76	CAP V	OUT	CAPSTAN MOTOR CONTROL
77	D.V.DET	IN	DRUM DRIVE VOLTAGE DETECT
78	PROTECT	IN	SWD5V/12V DETECT
79	A. LEV(Lch)	-	NC
80	A. LEV(Rch)	-	NC